XXL406

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Technische Unterlage

# Quelle Technischer Kundendienst 013.6457

| | |
|---|---|
| BESTELL-NR. | 0136457 |
| GERAETEBEZEICHNUNG | UNIV.-STEREO-TURM |
| WARENGATTUNG | 659 |
| AUSFUEHRUNGS-NR. | 001 |
| GERAETEBESCHREIBUNG | |
| PRIVILEG | VTCF 3021 |
| LIEFERANTEN-NR. | 118859 |
| PREIS | 1699.00 |
| KATALOG | 924 |
| GARANTIEZEIT | 6 |
| KD-SEKTOR | R |
| HEIM/BRINGE | WERKSTATT |
| BETREUUNG | EIGEN |
| KOSTENTRAEGER | EIGEN |
| REPARATURFAEHIG | JA |

S. 54

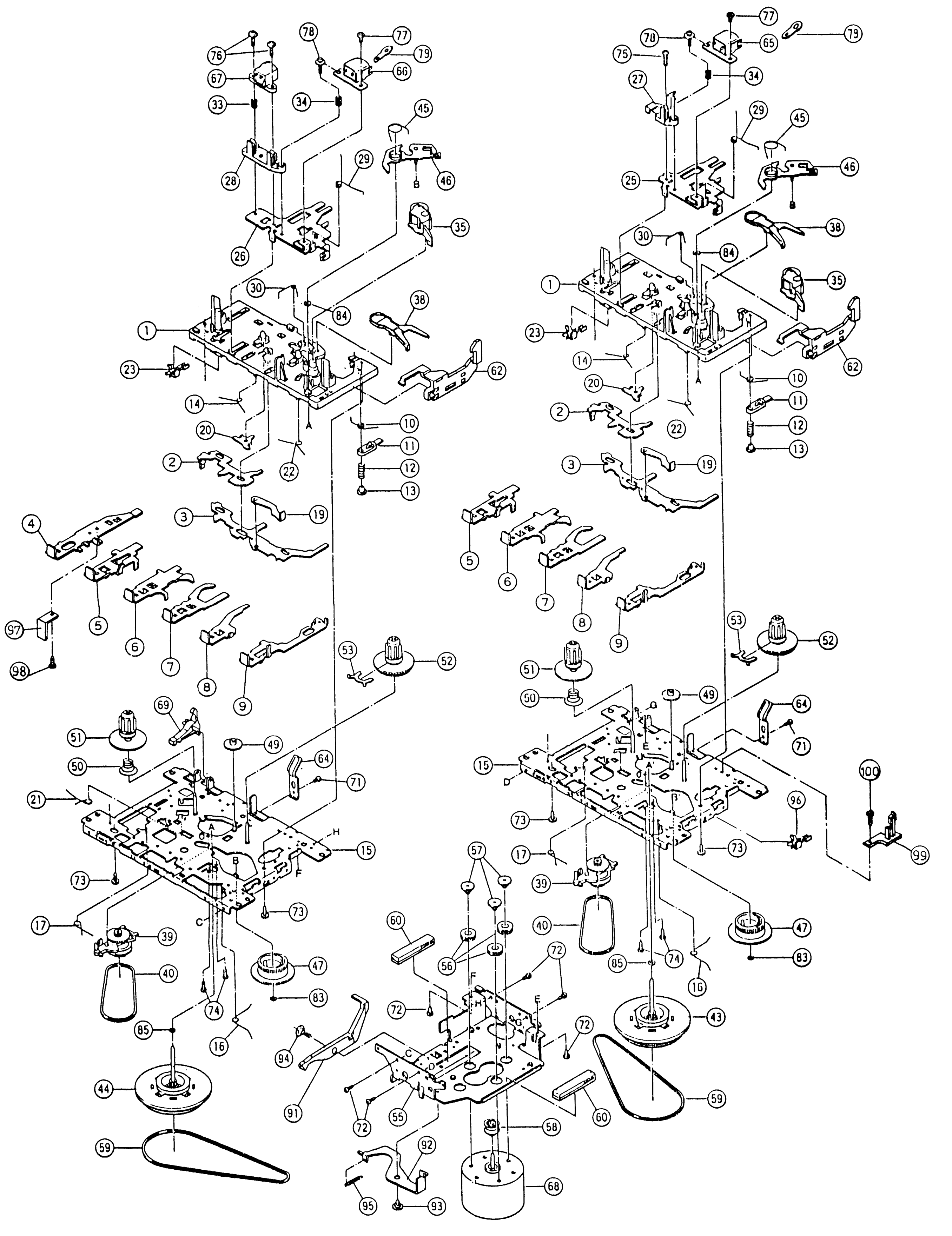
Großversandhaus Quelle, Gustav Schickedanz KG. Nachdruck nicht gestattet H/W 92/93 Sept. 92
Kundendienstzentralleitung Ulmenstraße 52 **Nürnberg** Änderungen vorbehalten

**Bei allen Reparaturen sind die gültigen Sicherheitsvorschriften zu beachten!**

6700-451/1184

## Cassette Deck Exploded View

Type No. TN-21ZSW-134    Part No. 4380603940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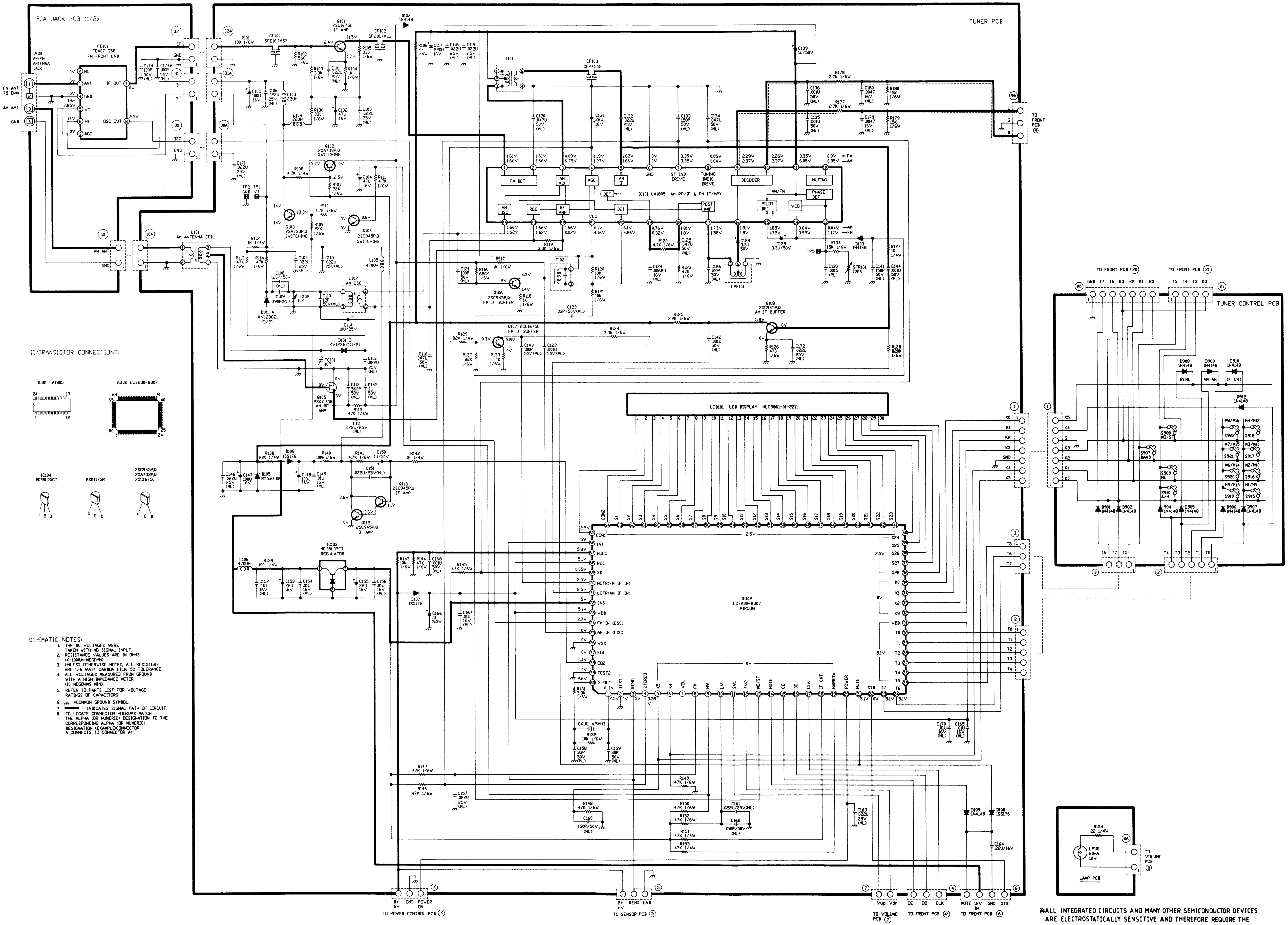
# Schematic Diagram – Tuner

Model No. VTCF-3021


RCA JACK PCB (1/2)
JK101 AM/FM ANTENNA JACK
FM ANT 75 OHM
AM ANT
GND
FE101 FE407-G58 FM FRONT END
TUNER PCB
L101 AM ANTENNA COIL
Q101 2SC1675L IF AMP
CF101 SFE10.7MS3
CF102 SFE10.7MS3
CF103 SFP450G
T101
Q102 2SA733P,Q SWITCHING
Q103 2SA733P,Q SWITCHING
Q104 2SC945P,Q SWITCHING
IC101 LA1805 AM RF/IF & FM IF/MPX
FM DET
AM MIX
AGC
AM IF
DET
DECODER
MUTING
AM/FM
PHASE DET
PILOT DET
VCO
REG
RF AMP
POST AMP
AM OSC
ST IND DRIVE
TUNING INDIC DRIVE
LPF101
D101-A KV1236Z1 (1/2)
D101-B KV1236Z1 (1/2)
L102 AM OSC
Q105 2SK117GR AM RF AMP
Q106 2SC945P,Q FM IF BUFFER
Q107 2SC1675L FM IF BUFFER
Q108 2SC945P,Q AM IF BUFFER
Q112 2SC945P,Q IF AMP
Q113 2SC945P,Q IF AMP
IC103 MC78L05CT REGULATOR
IC/TRANSISTOR CONNECTIONS
IC101 LA1805
IC102 LC7230-8307
IC104 MC78L05CT
2SK117GR
2SC945P,Q 2SA733P,Q 2SC1675L
LCD101 LCD DISPLAY MLC9061-01-2211
IC102 LC7230-8307 MICON
CX101 4.5MHZ
TO FRONT PCB ⑨
TO FRONT PCB ⑳
TO FRONT PCB ㉑
TUNER CONTROL PCB
REMO
AM AN
IF CNT
S907 BAND
S908 MO/ST
S909 ME
S910 A/M
LAMP PCB
R154 22 1/4W
LP101 60mA 12V
TO VOLUME PCB ⑧
TO POWER CONTROL PCB Ⓚ
TO SENSOR PCB ⑤
TO VOLUME PCB ⑦
TO FRONT PCB ④
TO FRONT PCB ⑥

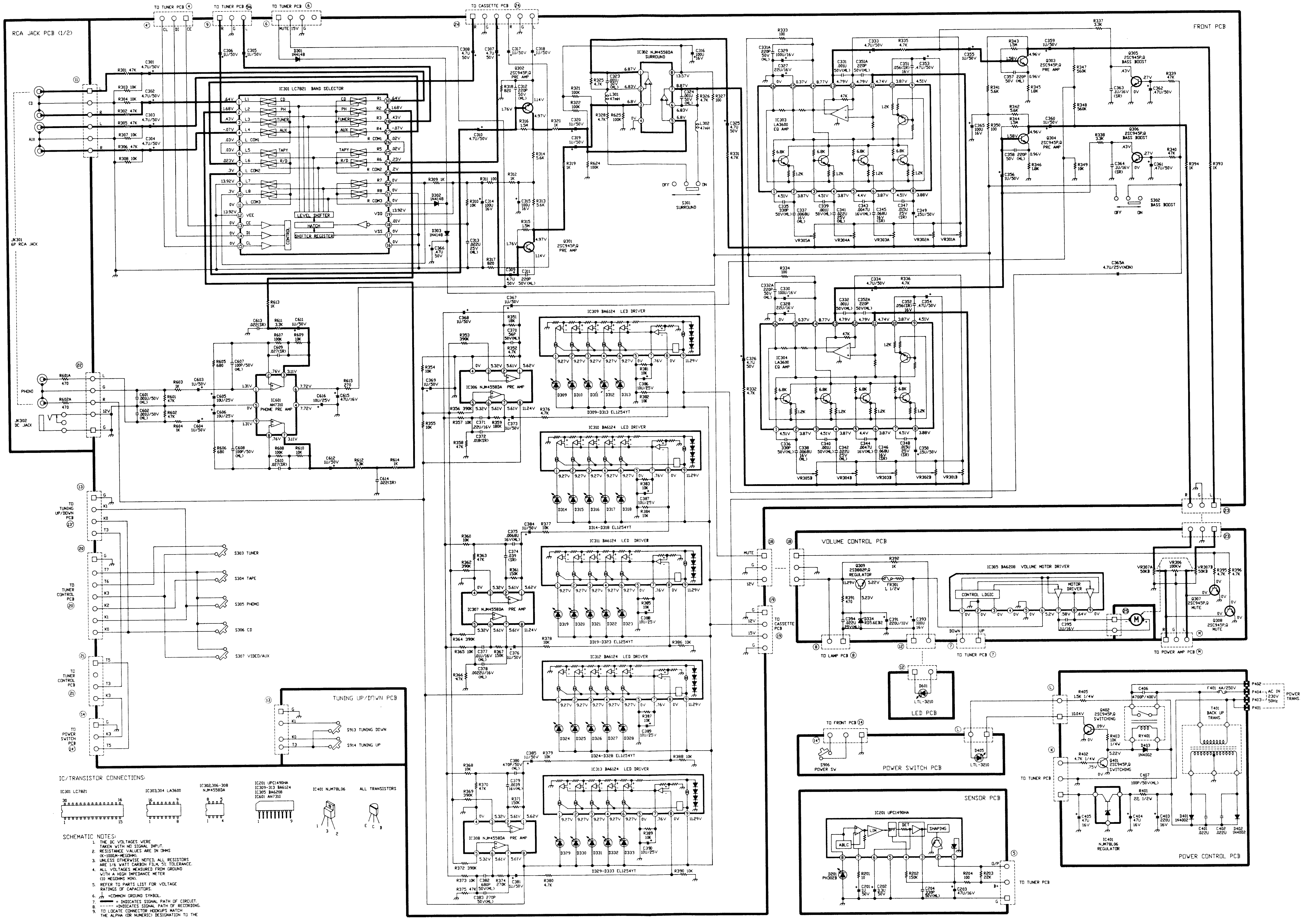
SCHEMATIC NOTES:

1. THE DC VOLTAGES WERE TAKEN WITH NO SIGNAL INPUT.
2. RESISTANCE VALUES ARE IN OHMS (K-1000,M-MEGOHM).
3. UNLESS OTHERWISE NOTED, ALL RESISTORS ARE 1/6 WATT CARBON FILM, 5% TOLERANCE.
4. ALL VOLTAGES MEASURED FROM GROUND WITH A HIGH IMPEDANCE METER (10 MEGOHMS MIN).
5. REFER TO PARTS LIST FOR VOLTAGE RATINGS OF CAPACITORS.
6. ⏚ =COMMON GROUND SYMBOL.
7. ━━ = INDICATES SIGNAL PATH OF CIRCUIT.
8. TO LOCATE CONNECTOR HOOKUPS MATCH THE ALPHA (OR NUMERIC) DESIGNATION TO THE CORRESPONDING ALPHA (OR NUMERIC) DESIGNATION (EXAMPLE:CONNECTOR A CONNECTS TO CONNECTOR A)

※ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBCD UNDER THE "ELECTROSTATICALLY SENSITIVE(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.※

# Schematic Diagram – Front

Model No. VTCF-3021


RCA JACK PCB (1/2)
FRONT PCB
TO TUNER PCB ④
TO TUNER PCB ㉖
TO TUNER PCB ⑥
TO CASSETTE PCB ㉔
IC301 LC7821 BAND SELECTOR
IC302 NJM4558DA SURROUND
IC303 LA3600 EQ AMP
IC304 LA3600 EQ AMP
IC601 AN7310 PHONE PRE AMP
IC306 NJM4558DA PRE AMP
IC307 NJM4558DA PRE AMP
IC308 NJM4558DA PRE AMP
IC309 BA6124 LED DRIVER
IC310 BA6124 LED DRIVER
IC311 BA6124 LED DRIVER
IC312 BA6124 LED DRIVER
IC313 BA6124 LED DRIVER
JK301 6P RCA JACK
JK302 DC JACK
PHONO
CD
AUX
S301 SURROUND
S302 BASS BOOST
Q301 2SC945P,Q PRE AMP
Q302 2SC945P,Q PRE AMP
Q303 2SC945P,Q PRE AMP
Q304 2SC945P,Q PRE AMP
Q305 2SC945P,Q BASS BOOST
Q306 2SC945P,Q BASS BOOST
VR305A VR304A VR303A VR302A VR301A
VR305B VR304B VR303B VR302B VR301B
TO TUNING UP/DOWN PCB ⑬
TO TUNER CONTROL PCB ⑳
TO TUNER CONTROL PCB ㉑
TO POWER SWITCH PCB ⑭
S303 TUNER
S304 TAPE
S305 PHONO
S306 CD
S307 VIDEO/AUX
TUNING UP/DOWN PCB
S913 TUNING DOWN
S914 TUNING UP
VOLUME CONTROL PCB
IC305 BA6208 VOLUME MOTOR DRIVER
CONTROL LOGIC
MOTOR DRIVER
Q309 2SD882P,Q REGULATOR
Q307 2SC945P,Q MUTE
Q308 2SC945P,Q MUTE
TO LAMP PCB ⑧
TO TUNER PCB ⑦
TO POWER AMP PCB Ⓜ
TO CASSETTE PCB ⑲
LED PCB
D601 LTL-3210
TO FRONT PCB ⑭
S906 POWER SW
POWER SWITCH PCB
D405 LTL-3210
SENSOR PCB
IC201 UPC1490HA
D201 PH302B
TO TUNER PCB
POWER CONTROL PCB
Q402 2SC945P,Q SWITCHING
Q401 2SC945P,Q SWITCHING
IC401 NJM78L06 REGULATOR
T401 BACK UP TRANS
RY401
F401 4A/250V
AC IN 230V 50Hz
POWER TRANS.
IC/TRANSISTOR CONNECTIONS:
IC301 LC7821
IC303,304 LA3600
IC302,306-308 NJM4558DA
IC201 UPC1490HA
IC309-313 BA6124
IC305 BA6208
IC601 AN7310
IC401 NJM78L06
ALL TRANSISTORS
E C B

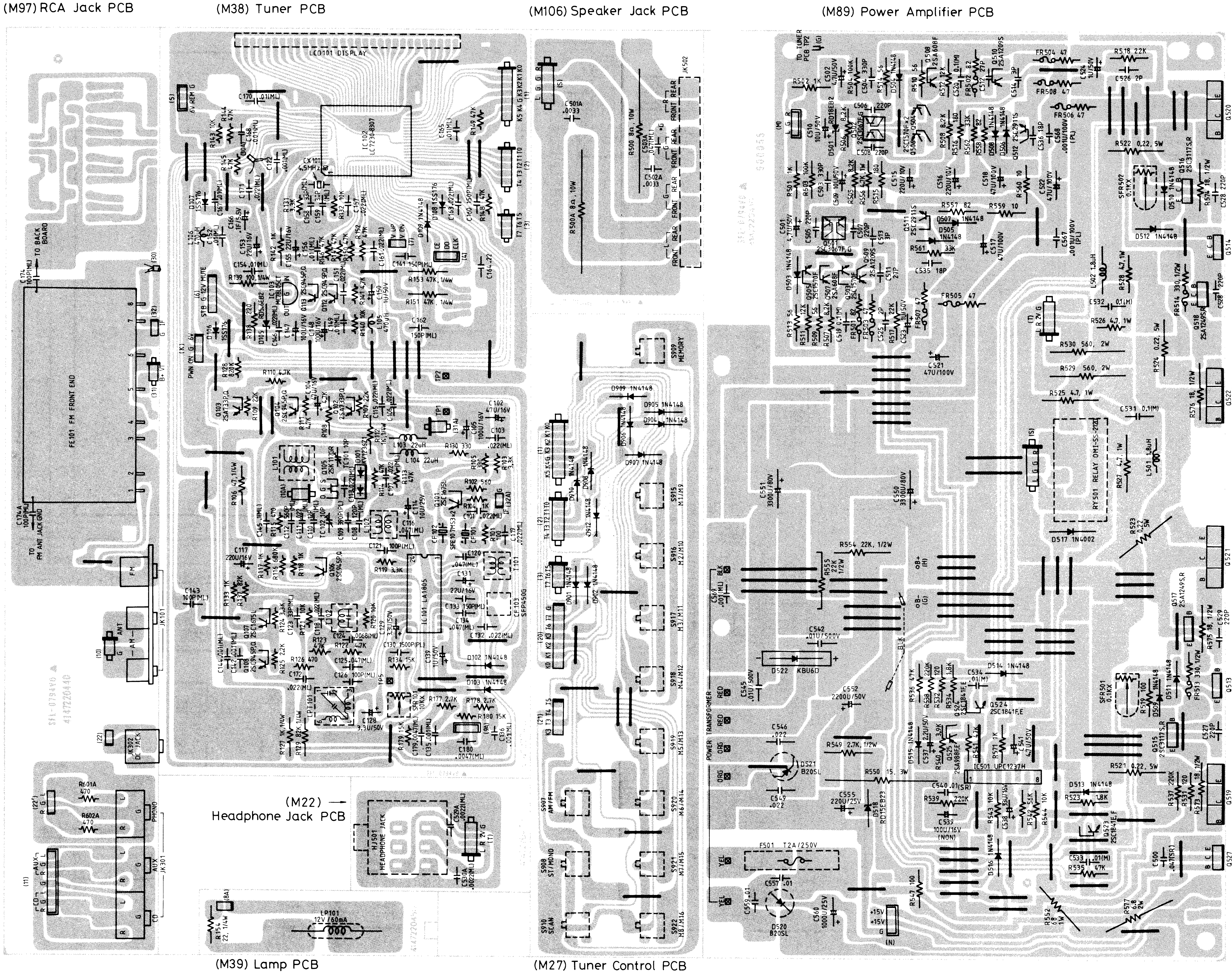
SCHEMATIC NOTES:

1. THE DC VOLTAGES WERE TAKEN WITH NO SIGNAL INPUT.
2. RESISTANCE VALUES ARE IN OHMS (K-1000,M-MEGOHM).
3. UNLESS OTHERWISE NOTED, ALL RESISTORS ARE 1/6 WATT CARBON FILM, 5% TOLERANCE.
4. ALL VOLTAGES MEASURED FROM GROUND WITH A HIGH IMPEDANCE METER (10 MEGOHMS MIN).
5. REFER TO PARTS LIST FOR VOLTAGE RATINGS OF CAPACITORS.
6. ⏚ =COMMON GROUND SYMBOL.
7. ▬▬ = INDICATES SIGNAL PATH OF CIRCUIT.
8. ----- =INDICATES SIGNAL PATH OF RECORDING.
9. TO LOCATE CONNECTOR HOOKUPS MATCH THE ALPHA (OR NUMERIC) DESIGNATION TO THE CORRESPONDING ALPHA (OR NUMERIC) DESIGNATION (EXAMPLE:CONNECTOR A CONNECTS TO CONNECTOR A)

※ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.※

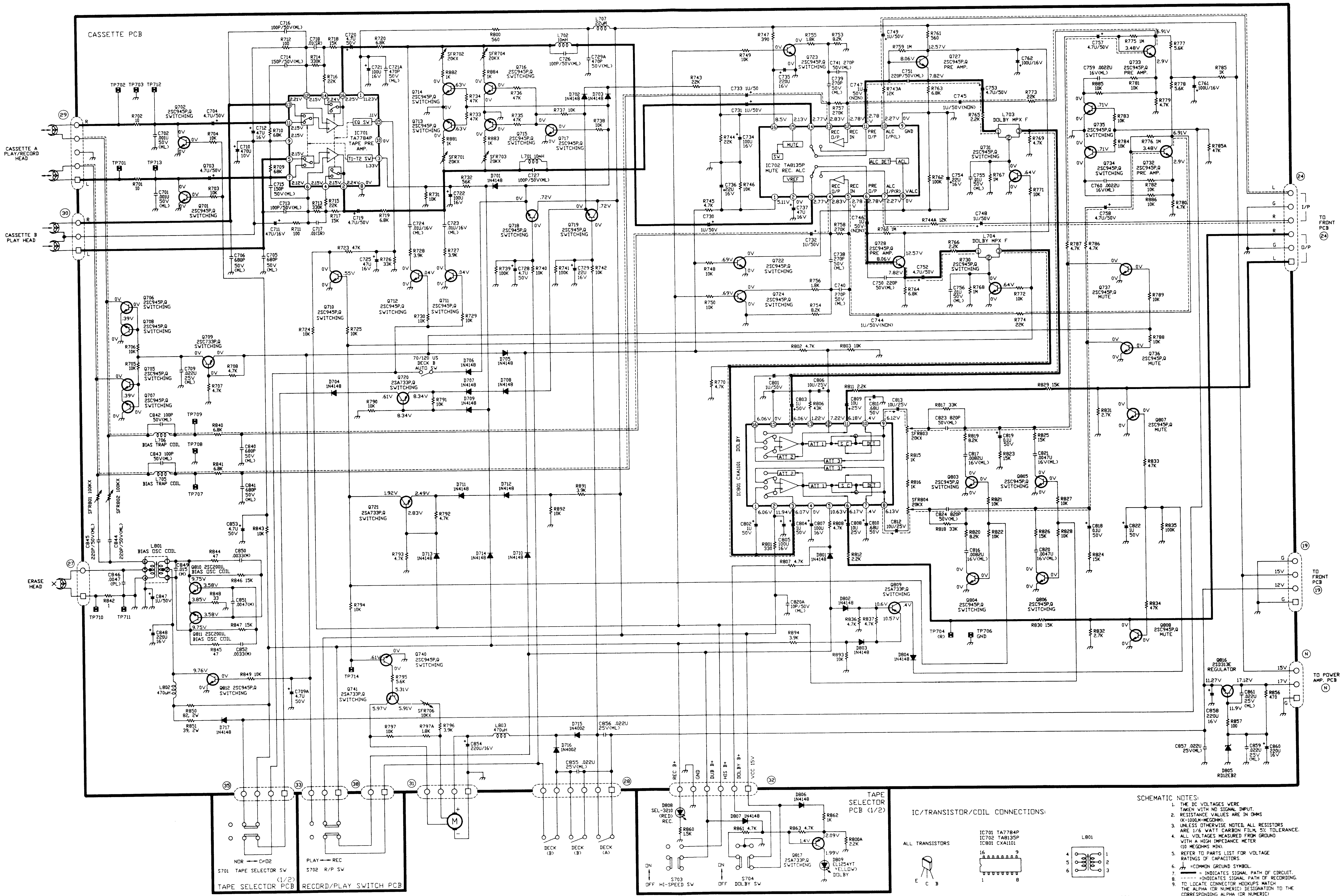
# P C Board– Solder Side

Model No. VTCF-3021


(M97) RCA Jack PCB
(M38) Tuner PCB
(M106) Speaker Jack PCB
(M89) Power Amplifier PCB
(M22) Headphone Jack PCB
(M39) Lamp PCB
(M27) Tuner Control PCB
LCD101 DISPLAY
FE101 FM FRONT END
IC101 LA1805
IC501 UPC1237H
RY501 RELAY OMI-SS-212
POWER TRANSFORMER
F501 T2A/250V
LP101 12V/60mA
HJ501 HEADPHONE JACK
JK101
JK301
JK502
JK302 DC JACK
D522 KBU6D
S909 MEMORY
S915 M1/M9
S916 M2/M10
S917 M3/M11
S918 M4/M12
S919 M5/M13
S920 M6/M14
S921 M7/M15
S922 M8/M16
S907 AM/FM
S908 ST/MONO
S910 SCAN

# Schematic Diagram – Cassette

Model No. VTCF-3021


CASSETTE PCB
CASSETTE A PLAY/RECORD HEAD
CASSETTE B PLAY HEAD
ERASE HEAD
IC701 TA7784P TAPE PRE AMP.
IC702 TA8135P MUTE REC. ALC
IC801 CXA1101 DOLBY
L703 DOLBY MPX F
L704 DOLBY MPX F
L801 BIAS OSC COIL
L705 BIAS TRAP COIL
L706 BIAS TRAP COIL
Q810 2SC2001L BIAS OSC COIL
Q811 2SC2001L BIAS OSC COIL
Q816 2SD313E REGULATOR
Q727 2SC945P,Q PRE AMP.
Q728 2SC945P,Q PRE AMP
Q733 2SC945P,Q PRE AMP.
Q732 2SC945P,Q PRE AMP.
Q736 2SC945P,Q MUTE
Q737 2SC945P,Q MUTE
Q807 2SC945P,Q MUTE
Q808 2SC945P,Q MUTE
70/120 US DECK B AUTO SW
TO FRONT PCB ㉔
TO FRONT PCB ⑲
TO POWER AMP. PCB Ⓝ
I/P
O/P
15V
12V
17V
TP701
TP702
TP703
TP704 (R)
TP706 GND
TP707
TP708
TP709
TP710
TP711
TP712
TP713
TP714
REC B+
GND
DUB B+
HIS B+
DOLBY B+
VCC 15V
DECK (B)
DECK (B)
DECK (A)
TAPE SELECTOR PCB (1/2)
NOR — CrO2
S701 TAPE SELECTOR SW
RECORD/PLAY SWITCH PCB
PLAY — REC
S702 R/P SW
D808 SEL-3210 (RED) REC.
D809 EL1254YT (YELLOW) DOLBY
ON OFF S703 HI-SPEED SW
ON OFF S704 DOLBY SW
IC/TRANSISTOR/COIL CONNECTIONS:
ALL TRANSISTORS
E C B
IC701 TA7784P
IC702 TA8135P
IC801 CXA1101
16
9
1
8
L801
4
5
6
1
2
3

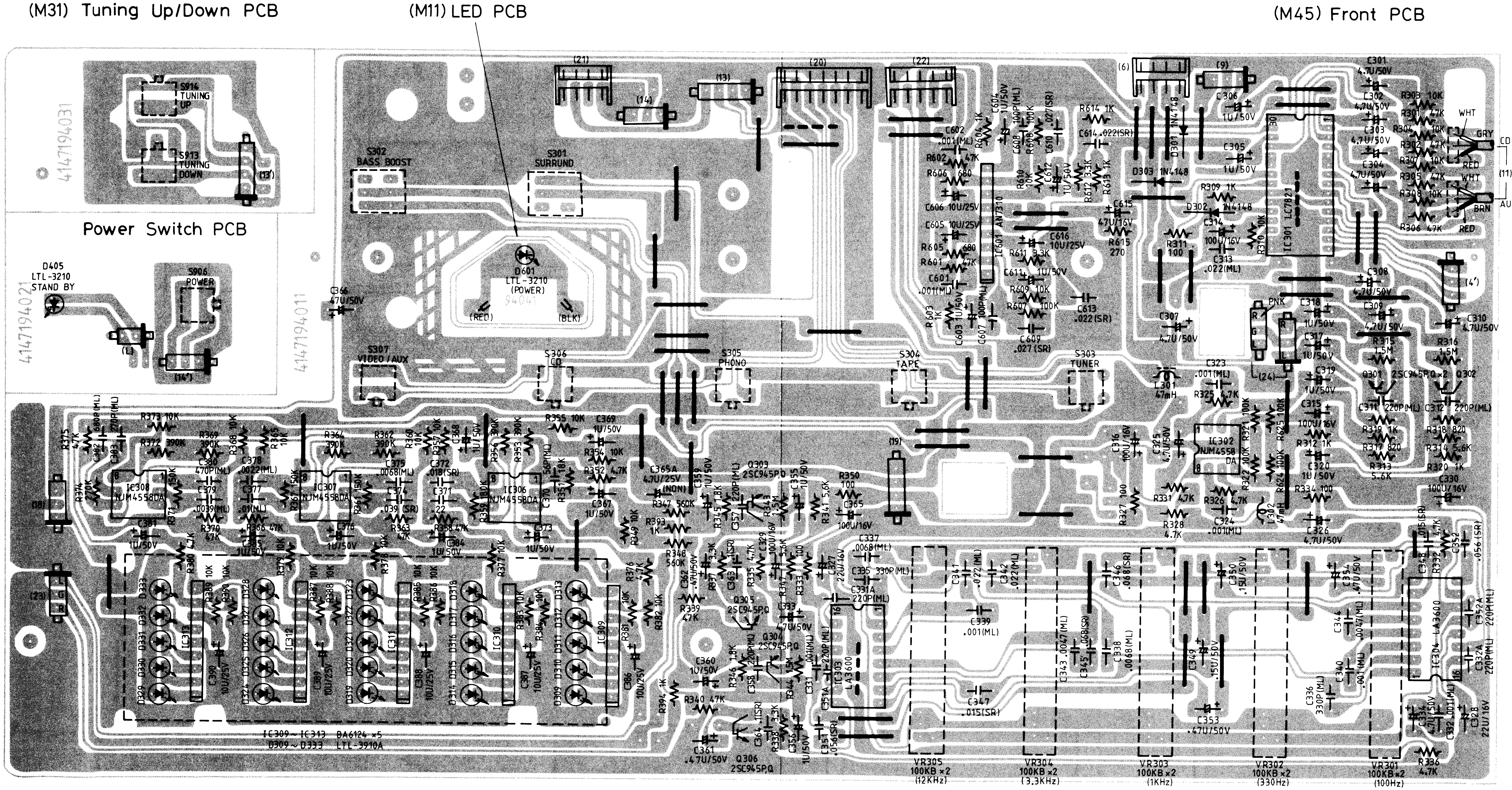
SCHEMATIC NOTES:

1. THE DC VOLTAGES WERE TAKEN WITH NO SIGNAL INPUT.
2. RESISTANCE VALUES ARE IN OHMS (K-1000,M-MEGOHM).
3. UNLESS OTHERWISE NOTED, ALL RESISTORS ARE 1/6 WATT CARBON FILM, 5% TOLERANCE.
4. ALL VOLTAGES MEASURED FROM GROUND WITH A HIGH IMPEDANCE METER (10 MEGOHMS MIN).
5. REFER TO PARTS LIST FOR VOLTAGE RATINGS OF CAPACITORS.
6. ⏚ =COMMON GROUND SYMBOL.
7. ▬▬ = INDICATES SIGNAL PATH OF CIRCUIT.
8. ------ =INDICATES SIGNAL PATH OF RECORDING.
9. TO LOCATE CONNECTOR HOOKUPS MATCH THE ALPHA (OR NUMERIC) DESIGNATION TO THE CORRESPONDING ALPHA (OR NUMERIC) DESIGNATION (EXAMPLE:CONNECTOR A CONNECTS TO CONNECTOR A)

※ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.※

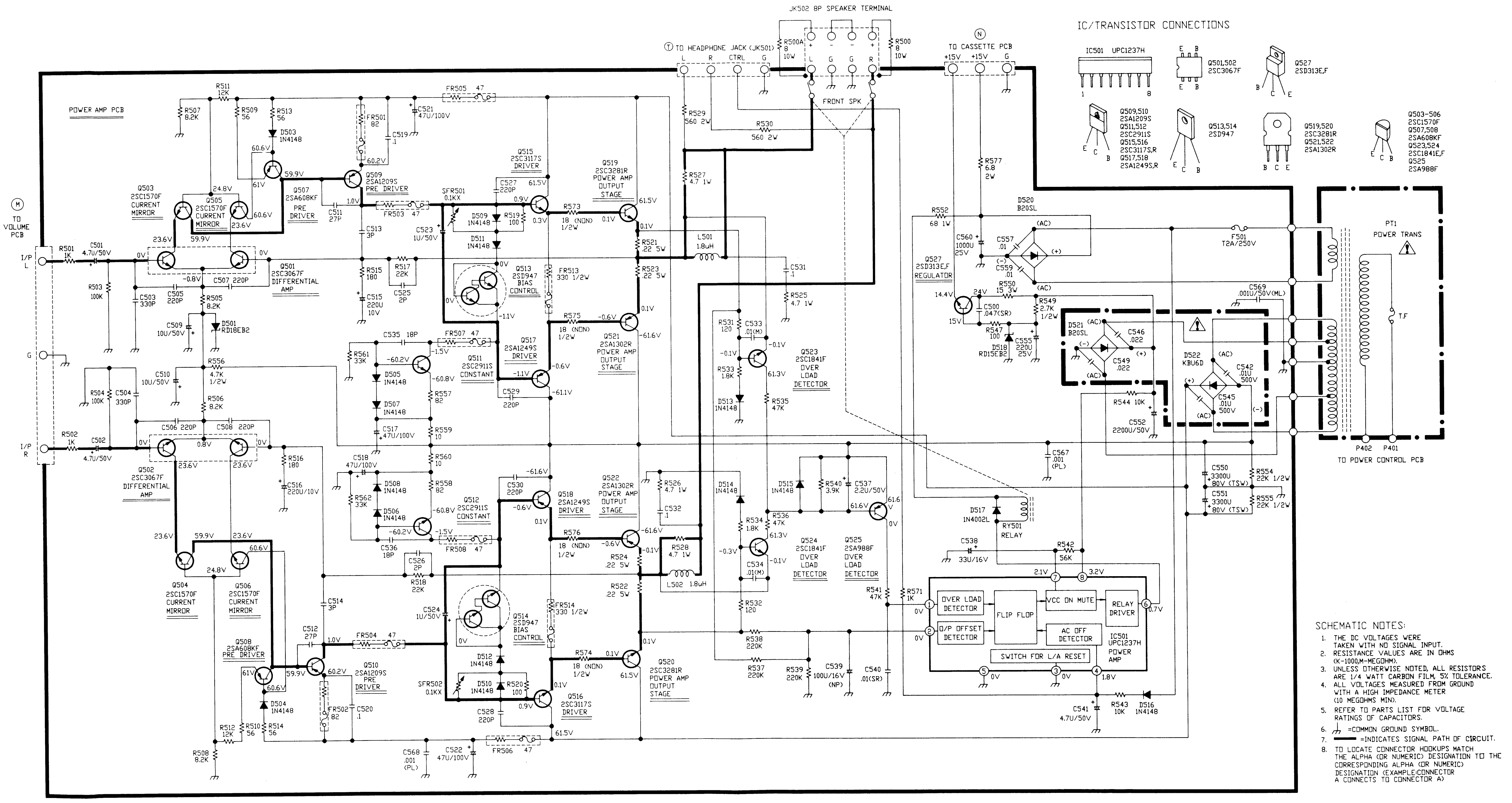
# P C Board- Solder Side

Model No. VTCF-3021


(M31) Tuning Up/Down PCB
(M11) LED PCB
(M45) Front PCB
Power Switch PCB
S916 TUNING UP
S913 TUNING DOWN
4147194031
D405 LTL-3210 STAND BY
S906 POWER
4147194021
4147194011
S302 BASS BOOST
S301 SURRUND
D601 LTL-3210 (POWER)
(RED)
(BLK)
S307 VIDEO / AUX
S306 CD
S305 PHONO
S304 TAPE
S303 TUNER
IC601 AN7310
IC301 LC7821
IC302 NJM4558DA
IC306 NJM4558DA
IC307 NJM4558DA
IC308 NJM4558DA
IC303 LA3600
IC304 LA3600
Q301 2SC945PQ ×2 Q302
Q303 2SC945PQ
Q304 2SC945PQ
Q305 2SC945PQ
Q306 2SC945PQ
D301 1N4148
D302 1N4148
D303 1N4148
L301 47mH
L302 47mH
CD
AUX
WHT
GRY
RED
BRN
(11)
IC309 ~ IC313 BA6124 ×5
D309 ~ D333 LTL-3910A
VR305 100KB ×2 (12KHz)
VR304 100KB ×2 (3.3KHz)
VR303 100KB ×2 (1KHz)
VR302 100KB ×2 (330Hz)
VR301 100KB ×2 (100Hz)

# Schematic Diagram – Power

Model No. VTCF-3021


JK502 8P SPEAKER TERMINAL
Ⓣ TO HEADPHONE JACK (JK501)
L R CTRL G
R500A 8 10W
R500 8 10W
+ - - +
L G G R
FRONT SPK
Ⓝ TO CASSETTE PCB
+15V +15V G
IC/TRANSISTOR CONNECTIONS
IC501 UPC1237H
1 8
E B
Q501,502 2SC3067F
Q527 2SD313E,F
B C E
Q509,510 2SA1209S
Q511,512 2SC2911S
Q515,516 2SC3117S,R
Q517,518 2SA1249S,R
Q513,514 2SD947
Q519,520 2SC3281R
Q521,522 2SA1302R
Q503-506 2SC1570F
Q507,508 2SA608KF
Q523,524 2SC1841E,F
Q525 2SA988F
Ⓜ TO VOLUME PCB
I/P L
G
I/P R
POWER AMP PCB
R501 1K
C501 4.7U/50V
R502 1K
C502 4.7U/50V
R503 100K
C503 330P
C505 220P
R505 8.2K
C509 10U/50V
D501 RD18EB2
R504 100K
C504 330P
C510 10U/50V
R556 4.7K 1/2W
R506 8.2K
C506 220P
C508 220P
C507 220P
R507 8.2K
R509 56
R511 12K
R513 56
D503 1N4148
Q503 2SC1570F CURRENT MIRROR
Q505 2SC1570F CURRENT MIRROR
Q501 2SC3067F DIFFERENTIAL AMP
Q502 2SC3067F DIFFERENTIAL AMP
Q507 2SA608KF PRE DRIVER
Q509 2SA1209S PRE DRIVER
C511 27P
FR501 82
C519 .1
C521 47U/100V
FR505 47
FR503 47
C513 3P
R515 180
R517 22K
C525 2P
C515 220U 10V
C523 1U/50V
SFR501 0.1KX
D509 1N4148
R519 100
D511 1N4148
Q513 2SD947 BIAS CONTROL
FR513 330 1/2W
Q515 2SC3117S DRIVER
C527 220P
R573 18 (NON) 1/2W
Q519 2SC3281R POWER AMP OUTPUT STAGE
R521 .22 5W
R523 .22 5W
L501 1.8uH
R529 560 2W
R530 560 2W
R527 4.7 1W
C531 .1
R525 4.7 1W
C535 18P
FR507 47
R561 33K
D505 1N4148
D507 1N4148
C517 47U/100V
R557 82
R559 10
Q511 2SC2911S CONSTANT
Q517 2SA1249S DRIVER
C529 220P
R575 18 (NON) 1/2W
Q521 2SA1302R POWER AMP OUTPUT STAGE
R531 120
C533 .01(M)
R533 1.8K
D513 1N4148
R535 47K
Q523 2SC1841F OVER LOAD DETECTOR
R516 180
C516 220U/10V
C518 47U/100V
D508 1N4148
R562 33K
D506 1N4148
R560 10
R558 82
Q512 2SC2911S CONSTANT
C536 18P
FR508 47
C526 2P
R518 22K
C530 220P
Q518 2SA1249S DRIVER
R576 18 (NON) 1/2W
Q522 2SA1302R POWER AMP OUTPUT STAGE
R526 4.7 1W
C532 .1
R524 .22 5W
R528 4.7 1W
L502 1.8uH
R522 .22 5W
Q504 2SC1570F CURRENT MIRROR
Q506 2SC1570F CURRENT MIRROR
Q508 2SA608KF PRE DRIVER
C514 3P
C512 27P
FR504 47
Q510 2SA1209S PRE DRIVER
C524 1U/50V
Q514 2SD947 BIAS CONTROL
FR514 330 1/2W
D512 1N4148
D510 1N4148
R520 100
SFR502 0.1KX
C528 220P
R574 18 (NON) 1/2W
Q520 2SC3281R POWER AMP OUTPUT STAGE
Q516 2SC3117S DRIVER
D504 1N4148
FR502 82
C520 .1
R512 12K
R510 56
R514 56
R508 8.2K
C568 .001 (PL)
C522 47U/100V
FR506 47
D514 1N4148
D515 1N4148
R540 3.9K
C537 2.2U/50V
R534 1.8K
R536 47K
Q524 2SC1841F OVER LOAD DETECTOR
Q525 2SA988F OVER LOAD DETECTOR
C534 .01(M)
R532 120
R538 220K
R537 220K
R539 220K
C539 100U/16V (NP)
C540 .01(SR)
R541 47K
R571 1K
D517 1N4002L
RY501 RELAY
C538 33U/16V
R542 56K
OVER LOAD DETECTOR
O/P OFFSET DETECTOR
FLIP FLOP
VCC ON MUTE
AC OFF DETECTOR
RELAY DRIVER
SWITCH FOR L/A RESET
IC501 UPC1237H POWER AMP
C541 4.7U/50V
R543 10K
D516 1N4148
R577 6.8 2W
R552 68 1W
C560 1000U 25V
C557 .01
C559 .01
Q527 2SD313E,F REGULATOR
R550 15 3W
C500 .047(SR)
R547 100
D518 RD15EB2
C555 220U 25V
R549 2.7K 1/2W
D520 B20SL
D521 B20SL
C546 .022
C549 .022
D522 KBU6D
C542 .01U 500V
C545 .01U 500V
R544 10K
C552 2200U/50V
C569 .001U/50V(ML)
F501 T2A/250V
PT1 POWER TRANS
T.F
C567 .001 (PL)
C550 3300U 80V (TSW)
C551 3300U 80V (TSW)
R554 22K 1/2W
R555 22K 1/2W
P402 P401
TO POWER CONTROL PCB
(AC)
(+)
(-)
14.4V
15V
24V
0V
60.6V
59.9V
61V
24.8V
23.6V
-0.8V
0.8V
1.0V
60.2V
0.9V
61.5V
0.3V
0.1V
-1.1V
-60.2V
-60.8V
-1.5V
-0.6V
-61.1V
-61.6V
-0.1V
61.3V
-0.3V
61.6V
2.1V
3.2V
0.7V
1.8V

SCHEMATIC NOTES:

1. THE DC VOLTAGES WERE TAKEN WITH NO SIGNAL INPUT.
2. RESISTANCE VALUES ARE IN OHMS (K-1000,M-MEGOHM).
3. UNLESS OTHERWISE NOTED, ALL RESISTORS ARE 1/4 WATT CARBON FILM, 5% TOLERANCE.
4. ALL VOLTAGES MEASURED FROM GROUND WITH A HIGH IMPEDANCE METER (10 MEGOHMS MIN).
5. REFER TO PARTS LIST FOR VOLTAGE RATINGS OF CAPACITORS.
6. ⏚ =COMMON GROUND SYMBOL.
7. ▬▬ =INDICATES SIGNAL PATH OF CIRCUIT.
8. TO LOCATE CONNECTOR HOOKUPS MATCH THE ALPHA (OR NUMERIC) DESIGNATION TO THE CORRESPONDING ALPHA (OR NUMERIC) DESIGNATION (EXAMPLE:CONNECTOR A CONNECTS TO CONNECTOR A)

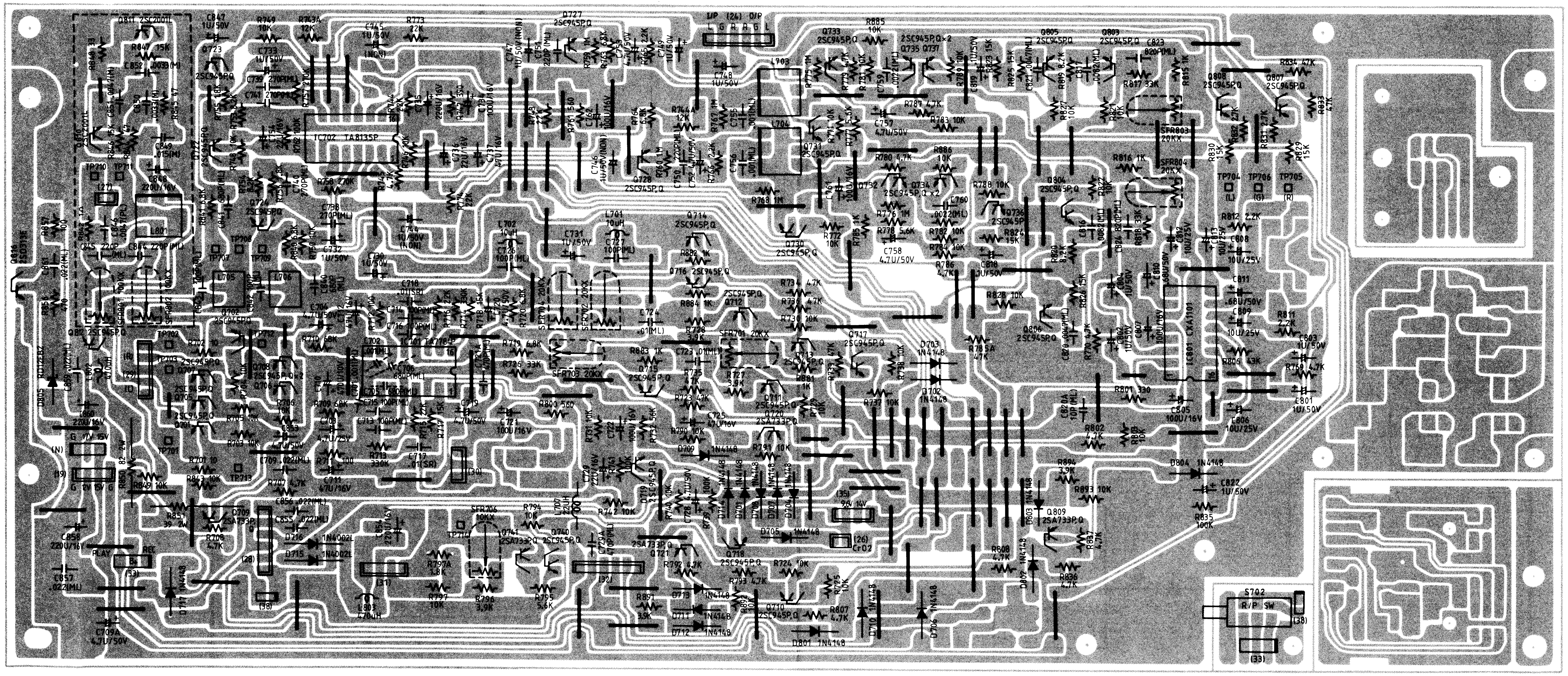
⚠ Critical component - replace with same as shown in Parts List or use equivalent with same characteristics

**※ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.※**

# P C Board- Solder Side

Model No. VTCF-3021

(M48) Cassette PCB

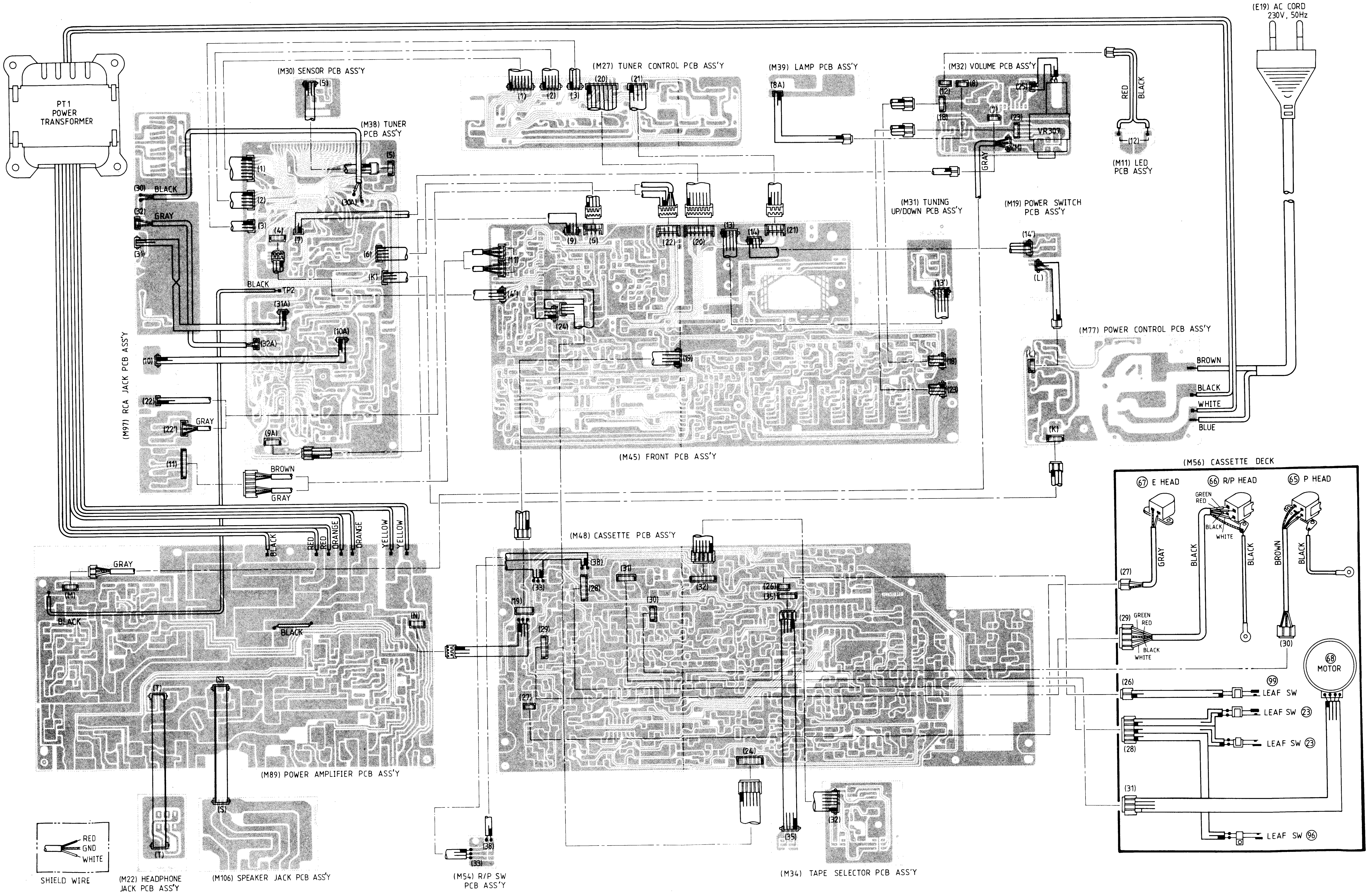


IC702 TA8135P
I/P (24) O/P
L G R R G L
IC801 CXA1101
S702 R/P SW
TP704
TP706
TP705
PLAY
REC

R/P SW PCB
(M54)

## Wiring Diagram-Component Side

Model No. VTCF-3021

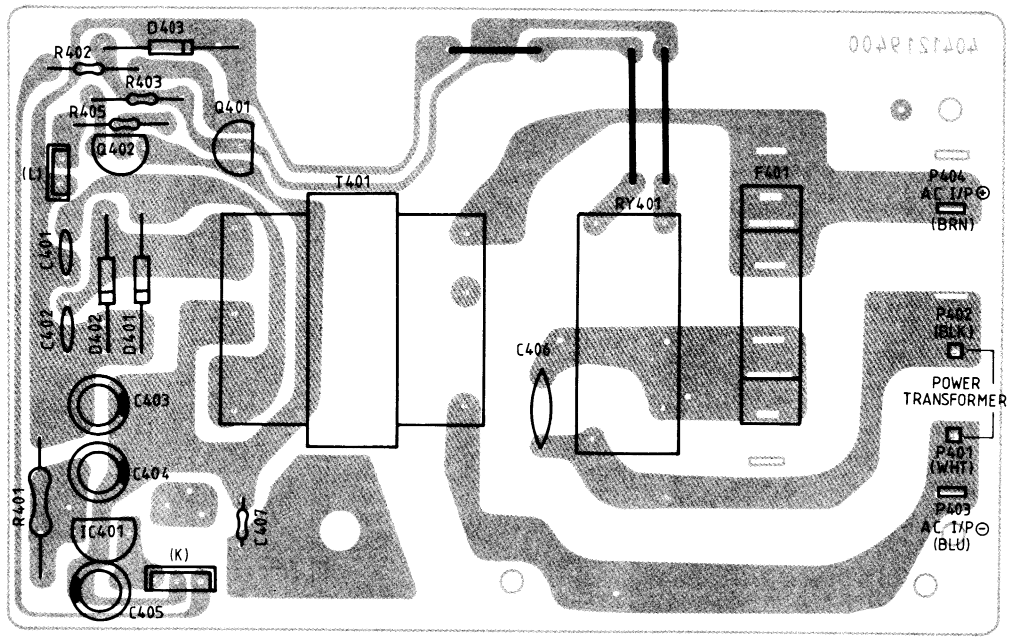


(E19) AC CORD
230V, 50Hz
PT1
POWER
TRANSFORMER
(M30) SENSOR PCB ASS'Y
(M38) TUNER PCB ASS'Y
(M27) TUNER CONTROL PCB ASS'Y
(M39) LAMP PCB ASS'Y
(M32) VOLUME PCB ASS'Y
VR301
RED
BLACK
GRAY
(M11) LED
PCB ASS'Y
(M31) TUNING
UP/DOWN PCB ASS'Y
(M19) POWER SWITCH
PCB ASS'Y
(M77) POWER CONTROL PCB ASS'Y
BROWN
BLACK
WHITE
BLUE
(M97) RCA JACK PCB ASS'Y
BLACK
GRAY
TP2
(M45) FRONT PCB ASS'Y
BROWN
GRAY
(M56) CASSETTE DECK
67 E HEAD
66 R/P HEAD
65 P HEAD
GREEN
RED
BLACK
WHITE
BROWN
68 MOTOR
99 LEAF SW
LEAF SW 23
LEAF SW 23
LEAF SW 96
(M48) CASSETTE PCB ASS'Y
BLACK
RED
RED
ORANGE
ORANGE
YELLOW
YELLOW
GRAY
BLACK
(M89) POWER AMPLIFIER PCB ASS'Y
RED
GND
WHITE
SHIELD WIRE
(M22) HEADPHONE
JACK PCB ASS'Y
(M106) SPEAKER JACK PCB ASS'Y
(M54) R/P SW
PCB ASS'Y
(M34) TAPE SELECTOR PCB ASS'Y

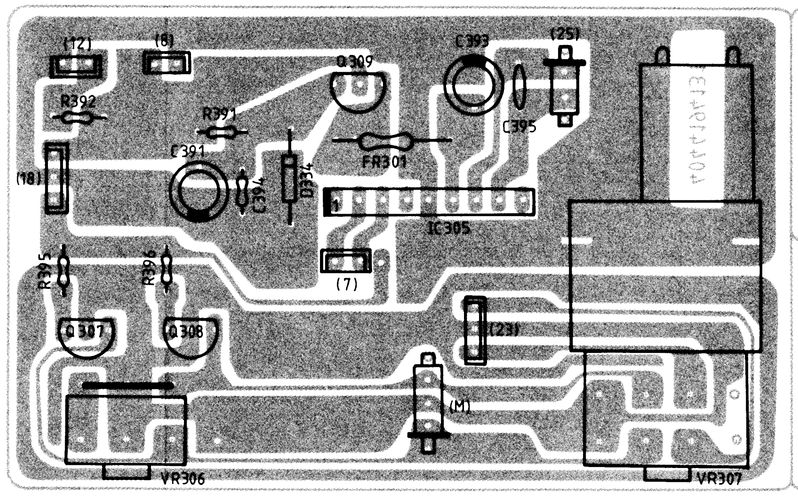
# P C Board-Component Side

Model No. VTCF-3021

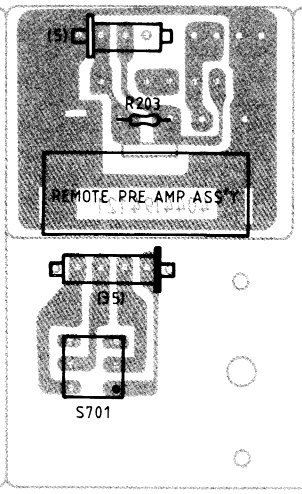
(M77) Power Control PCB


4041219400
D403
R402
R403
R405
Q401
Q402
(L)
T401
RY401
F401
P404
AC I/P⊕
(BRN)
C401
C402
D402
D401
C406
P402
(BLK)
POWER
TRANSFORMER
C403
C404
P401
(WHT)
P403
AC I/P⊖
(BLU)
R401
C407
IC401
(K)
C405

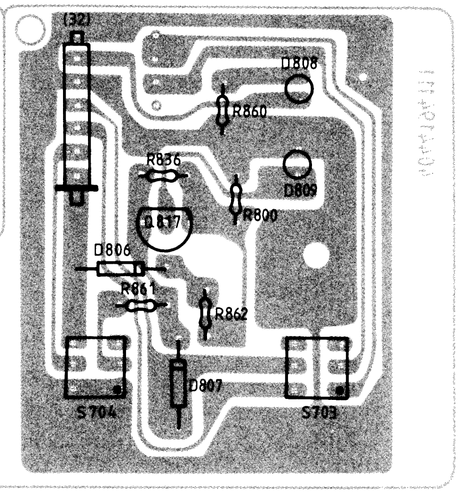
(M33) Volume PCB


(12)
(8)
Q309
C393
(25)
R392
R391
C395
FR301
C391
(18)
C394
D334
IC305
R395
R396
(7)
(23)
Q307
Q308
(M)
VR306
VR307

(M30) Sensor PCB

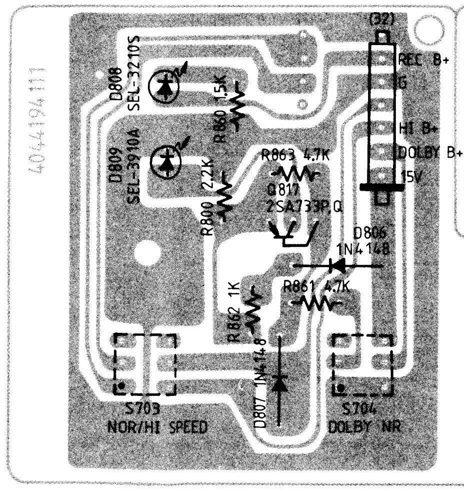

(5)
R203
REMOTE PRE AMP ASS'Y
(35)
S701

(M34) Tape Selector PCB

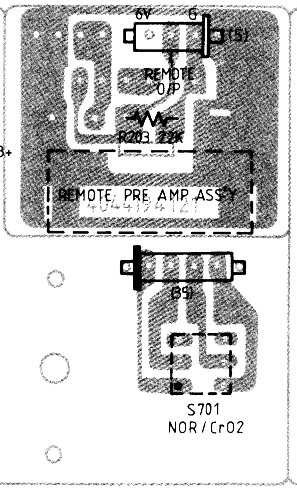

(32)
D808
R860
R836
D809
R800
Q817
D806
R861
R862
D807
S704
S703

# P C Board- Solder Side

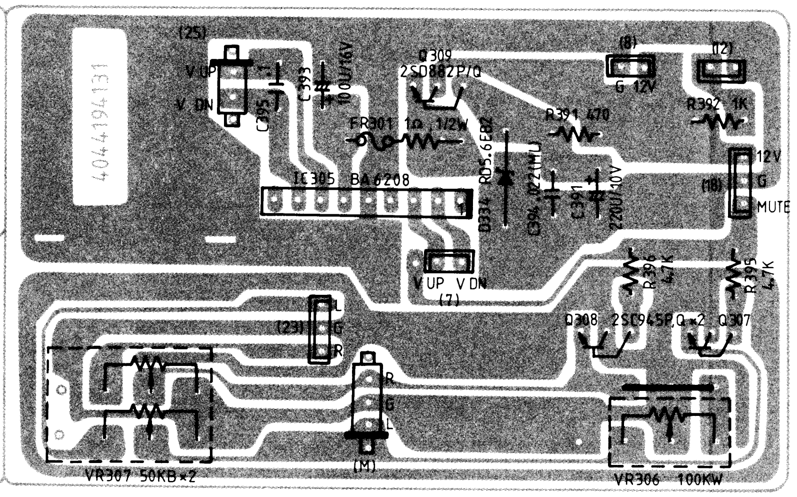
(M34) Tape Selector PCB


4044194111
(32)
D808
SEL-3210S
R860 1.5K
REC B+
G
HI B+
DOLBY B+
15V
D809
SEL-3910A
R800 2.2K
R863 4.7K
Q817
2SA733P,Q
D806
1N4148
R861 4.7K
R862 1K
D807 1N4148
S703
NOR/HI SPEED
S704
DOLBY NR

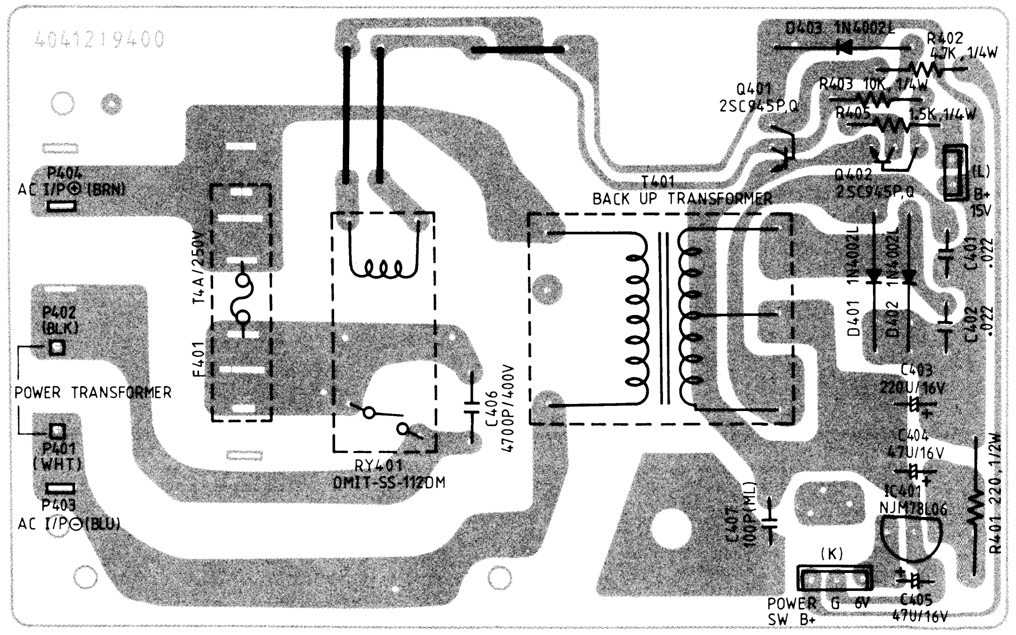
(M30)Sensor PCB


6V
G
(5)
REMOTE
O/P
R203 22K
REMOTE PRE AMP ASS'Y
4044194121
(35)
S701
NOR / Cr02

(M33) Volume PCB


4044194131
(25)
V UP
V DN
C395
C393
100U/16V
Q309
2SD882P/Q
(8)
G 12V
(12)
R392 1K
R391 470
FR301 1Ω 1/2W
IC305 BA6208
D334 RD5.6EB2
C394 .022(ML)
C391
220U/10V
12V
G
(18)
MUTE
V UP V DN
(7)
R396 4.7K
R395 4.7K
Q308 2SC945P,Q ×2 Q307
L
G
(23)
R
R
G
L
(M)
VR307 50KB×2
VR306 100KW

(M77) Power Control PCB


4041219400
D403 1N4002L
R402
4.7K 1/4W
Q401
2SC945P,Q
R403 10K 1/4W
R405 1.5K 1/4W
Q402
2SC945P,Q
(L)
B+
15V
P404
AC I/P⊕ (BRN)
T4A/250V
F401
T401
BACK UP TRANSFORMER
D401 1N4002L
D402 1N4002L
C401 .022
C402 .022
P402
(BLK)
POWER TRANSFORMER
P401
(WHT)
P403
AC I/P⊖(BLU)
C406
4700P/400V
RY401
OMIT-SS-112DM
C403
220U/16V
C404
47U/16V
IC401
NJM78L06
R401 220 1/2W
C407
100P(ML)
(K)
POWER G 6V
SW B+
C405
47U/16V

# Aligement Adjustments

## AM IF Alignment Procedure

---

Test Points: (AM IF In)
(AM IF Out)
Adjust : T101

---

1. Connect .022uF capacitor to IF sweep generator output to AM IF In.
2. Output the waveform the oscilloscope. (See figure 3)
3. Adjust T101 for maximum output.

## FM IF Alignment Procedure

---

Test Points: (FM IF In)
(FM IF Out)
Adjust : T102

---

1. Connect .022uF capacitor to IF sweep generator output to FM IF In. (See figure 4)
2. Output waveform from the oscilloscpoe FM IF out. (See figure 5)
3. Adjust T102 for maximum output.
4. Repeat adjustment as necessary for maximum sensitivity.

## FM Range & Sensitivity Adjustment

### Range:

1. FM RF signal generator input through antenna, output from speaker. (See figure 6)
2. Tuning to 87.5MHz, check DC meter Vt=1.6V +-0.05V
3. Tuning to 108MHz, check DC meter Vt=8V +-0.2V.

## FM MPX Adjustment

1. FM RF signal generator input through antenna, frequency counter across speaker.
2. Tuning to 98MHz, adjust SFR101, and frequency counter reading as 76KHz +-200Hz.

## AM Range & Sensitivity Adjustment

### Range:

1. AM RF signal generator O/P from loop antenna, and received by AM loop antenna. (See figure 7)
2. Tuning to 531KHz, adjust L102 let DC meter Vt=1.1V +-0.05V.
3. Tuning to 1602KHz, adjust TC102 let DC meter Vt=7.2V +-0.05V.
4. Repeat adjustments as necessary to minimum tracking error.

### Sensitivity:

1. Tuning to 603KHz, adjust L101 for maximum output.
2. Tuning to 1404KHz, adjust TC101 for maximum output.
3. Repeat adjustments necessary to minimum tracking error.

## Cassette Deck A/B Speed Adjustment

1. Counter connected to TP714 & GND.
2. Insert MTT-111 (or equivalent) test tape and in play mode.
3. Adjust SFR706, for 2940-3090Hz. (Normal-speed)

## Cassette Deck Head Azimuth Adjustment

1. Insert MTT-114 (or eqivalent) test tape and play mode.
2. VTVM commented to output terminals. (See figure 8)
3. Adjust screw, for head Azimuth Adjustment. (See figure 8)
   For maximum output. (12.5KHz)

## Dolby Level Adjustment

1. VTVM connected to TP705 (L), TP706 (G), TP704 (R).
2. Insert MTT-150 (or equivalent) test tape and in play mode.
3. Cassette A : Adjust SFR704 (R), SFR703 (L) for O/P=548mV (+-1dB).
4. Cassette B : Adjust SFR702 (R), SFR701 (L) for O/P=548mV (+-1dB).

## OSC Frequency Adjustment

1. Counter connected to TP710 and GND.
2. In Record mode and tape selector in normal position.
3. Adjust L704 let f=132KHz (+-5KHz).

## Bias Leakage Adjustment

1. VTVM connected to TP707 (L) and GND.
2. In record mode.
3. Adjust L705, let O/P to minimum.
4. VTVM connected to TP709 (R) and GND.
5. Adjust L706, let O/P to minimum.

## Bias Current Adjustment

1. VTVM connected to TP712 and TP702 (R)
2. In record mode, tape selector in normal position.
3. Adjust SFR802, let O/P=4.2mV.
4. VTVM connected to TP713 and TP701 (L).
5. Adjust SFR801, let O/P=4.2mV.
6. Tape selector in Cro2 position, the O/P=5.8mV.

## Dolby MPX Filter Adjustment

1. f=19KHz (+-0.1KHz) signal input from AUX.
2. VTVM connected to TP705 (L), TP706 (G), TP704 (R). (See figure 11)
3. In record mode, Dolby switch and Hi-speed switch off.
4. Adjust L703, L704, let O/P to minimum. (See figure 11)

## R/P Level Adjustment

1. f=400Hz signal input from AUX.
2. VTVM connected to TP705 (L), TP706 (G), TP704 (R). (See figure 11)
3. In record mode, Dolby switch and Hi-speed switch off.
4. Adjust SFR803 (L), SFR804 (R), let O/P=200mV. (See figure 11)

## Idle Current Adjustment

1. Power switch on, volume control to minimum.
2. Warm up at least 30 seconds.
3. DC meter across R521.
4. Adjust SFR501 (L), let DC=7mV.
5. DC meter across R522.
6. Adjust SFR502 (R), let DC=7mV.

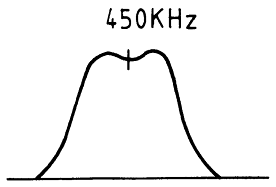


Figure 3

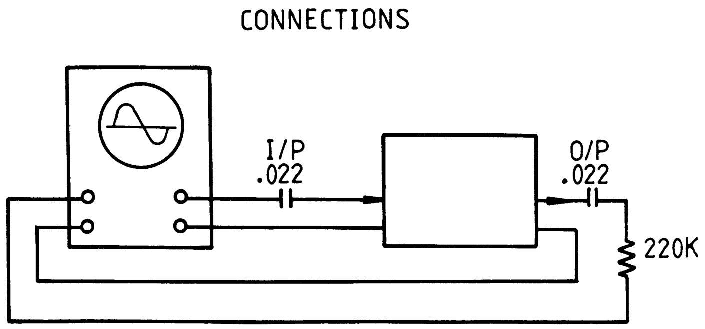

CONNECTIONS
I/P
.022
O/P
.022
220K

Figure 4

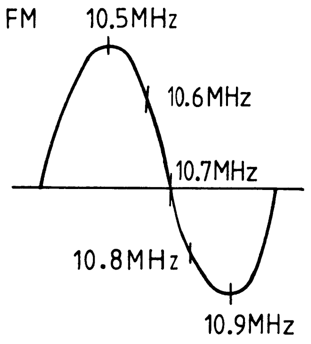


Figure 5

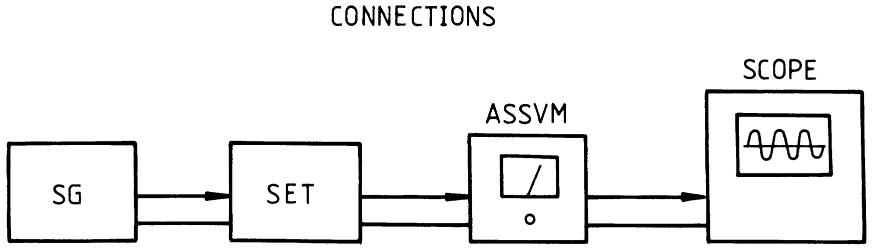

CONNECTIONS
SCOPE
ASSVM
SG
SET

Figure 6

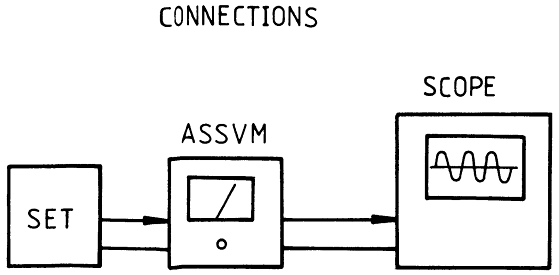

CONNECTIONS
SCOPE
ASSVM
SET

Figure 7

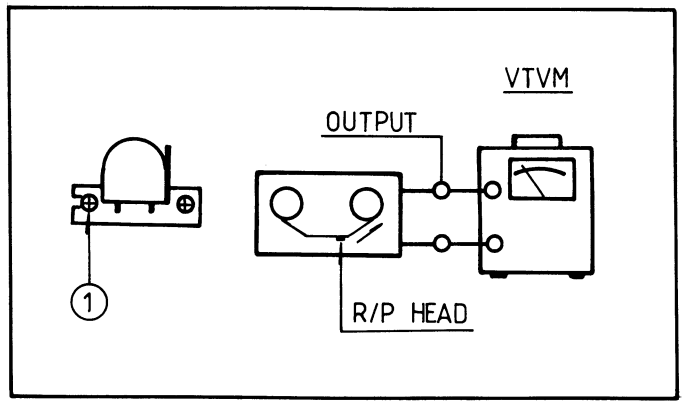

VTVM
OUTPUT
1
R/P HEAD

Figure 8

## Adjustment Locations

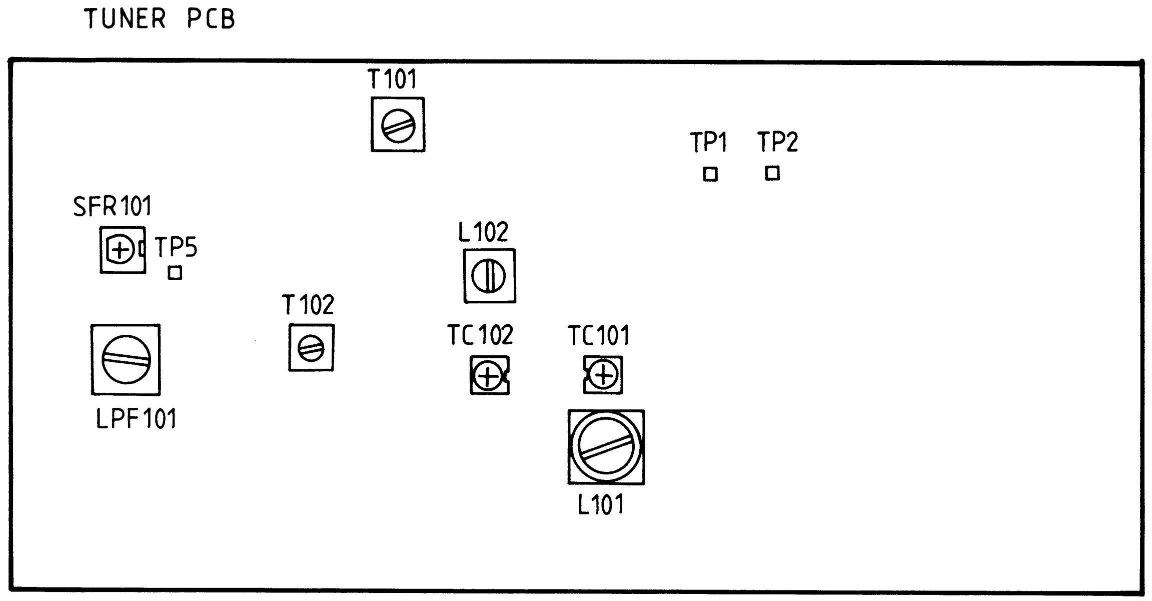

TUNER PCB
T101
TP1
TP2
SFR101
TP5
L102
T102
TC102
TC101
LPF101
L101

Figure 9

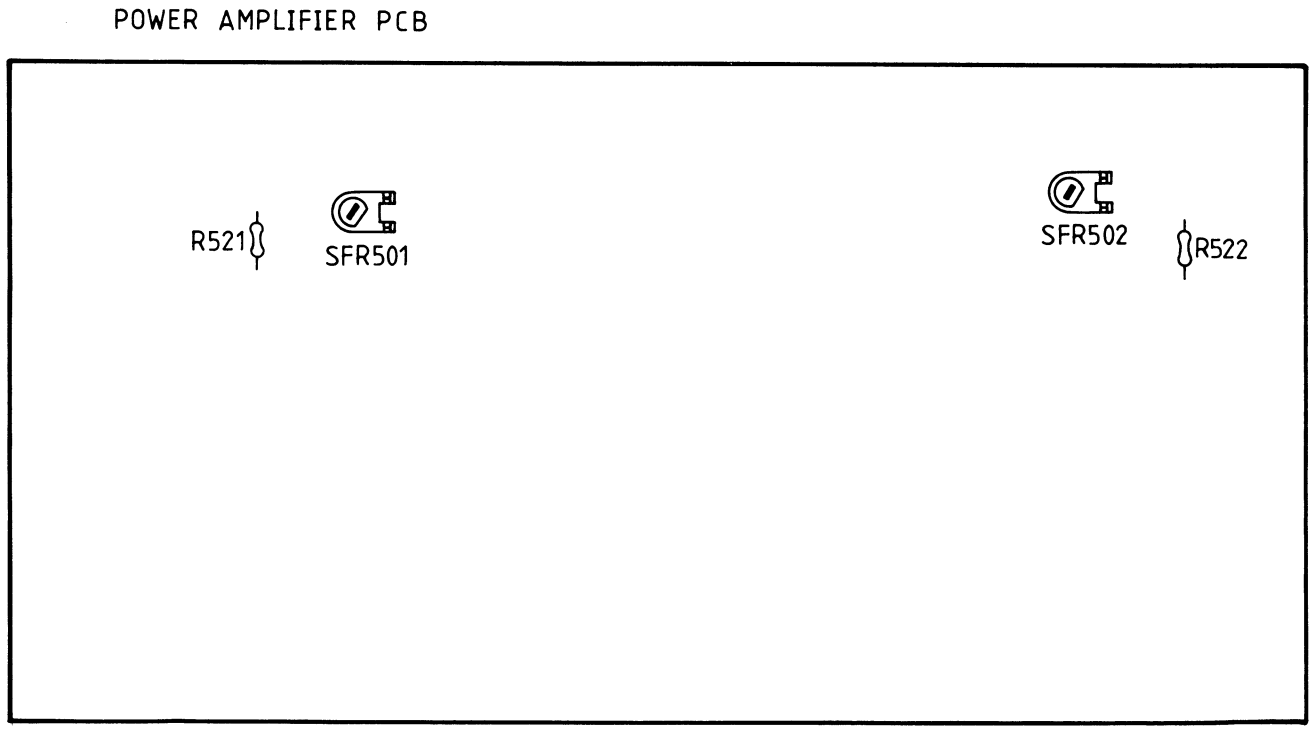
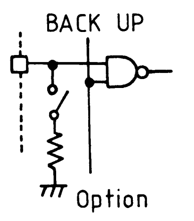
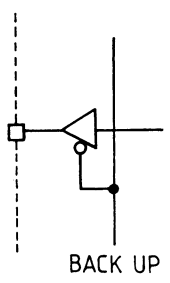
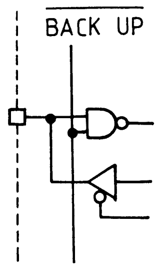
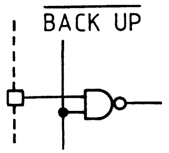
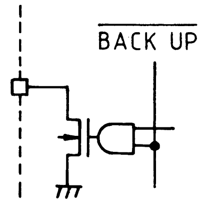

POWER AMPLIFIER PCB
R521
SFR501
SFR502
R522

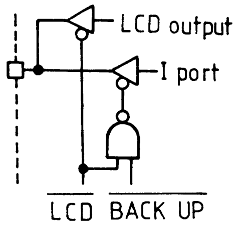
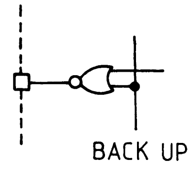
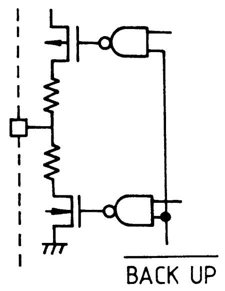
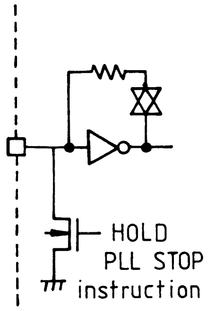
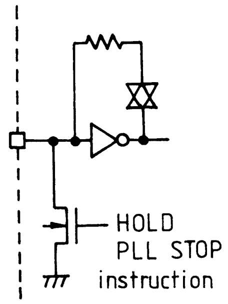
Figure 10

## Terminal Function IC102 (LC7230-8307)

| Pin Name | Pin No. | Functional Description | I/O | I/O Circuit Type |
|---|---|---|---|---|
| $PA_0$<br>$PA_1$<br>$PA_2$<br>$PA_3$ | 35<br>34<br>33<br>32 | Used exclusively for data input. Low threshold type. These port pins can be used for key data entry. Pull-down resistance can be selected by the user option. In this selection, all four port pins are controlled at one time. That is, the pull-down resistor cannot be selected for each port pin individually. Input to the port pins is inhibited during the BACKUP mode ON. | Input |  |
| $PB_0$<br>$PB_1$<br>$PB_2$<br>$PB_3$<br>$PC_0$<br>$PC_1$<br>$PC_2$<br>$PC_3$ | 30<br>29<br>28<br>27<br>26<br>25<br>24<br>23 | Used exclusively for data output. Can be used for key scan timing signal output because these ports are composed of CMOS transistors with unbalanced impedance. Enter into output high impedance state at the BACKUP mode. Placed in "L" level state at the reset ($\overline{RES}$ = "L"). | Output |  |
| $PD_0$<br>$PD_1$<br>$PD_2$<br>$PD_3$ | 22<br>21<br>20<br>19 | Used exclusively for data output. Normally CMOS output type. Enter into output high impedance state at the BACKUP mode. Placed in the "L" level state at the reset ($\overline{RES}$ = "L"). | | |
| $PE_0$<br>$PE_1$<br>$PE_2$<br>$PE_3$ | 18<br>17<br>16<br>15 | Used for data input and output. The port is set to the input mode once the input instruction (IN, TPT, or TPF) is executed in the application program while set to the output mode if the output instruction (OUT, SPB, RPB) is used. The operation mode, once selected by such an instruction, can be effective until an instruction of different type is used in application program.<br>Set to the input mode at the reset ($\overline{RES}$ = "L").<br>Set to the input mode at the BACKUP mode. In this case, note that data input to this port is inhibited. | Input/ Output |  |
| $PF_0$<br>$PF_1$<br>$PF_2$<br>$PF_3$ | 14<br>13<br>12<br>11 | Used for data input and output.<br>This port is controlled by the FPC instruction. Each port pin can be set to the input mode or the output mode by that instruction.<br>Set to the input mode at the reset ($\overline{RES}$ = "L").<br>This port is set to the input mode at the BACKUP mode. In this case, note that data input to this port is inhibited. | | |
| $PG_0$<br>$PG_1$<br>$PG_2$<br>$PG_3$ | 6<br>5<br>4<br>3 | Used exclusively for data input.<br>Data input to the port is inhibited at the BACKUP mode. | Input |  |
| $PH_0$<br>$PH_1$<br>$PH_2$<br>$PH_3$ | 10<br>9<br>8<br>7 | Used exclusively for data output.<br>This port can be used for frequency band power source selection because this port has Nch open drain output circuitry at a high withstand voltage level. Port pins $H_2$ and $H_3$ can be also used as the $DAC_1$ and $DAC_2$ outputs, respectively.<br>Enter into high impedance state at the reset ($\overline{RES}$ = "L") and the BACKUP mode. | Output |  |

---

## Terminal Function IC102 (LC7230-8307) (cont)

| Pin Name | Pin No. | Functional Description | I/O | I/O Circuit Type |
|---|---|---|---|---|
| $PI_0$/S25<br>$PI_1$/S26<br>$PI_2$/S27<br>$PI_3$/S28 | 39<br>38<br>37<br>36 | Used exclusively for data output.<br>This port has CMOS type output circuitry and can be selected as LCD driver output ports. The port operation mode can be selected by the SS or RS instruction. The output mode cannot be selected by such an instruction in bit units.<br>This port is set to the LCD driver output mode at the reset ($\overline{RES}$ = "L") and at the power supply. In this case, the segment display is forced into the OFF state.<br>This port is fixed to the "L" level at the BACKUP mode. | Output |  |
| S1 to S24 | 63 to 40 | Used for driving segments. That is, these ports are used as the LCD output drivers. The frame frequency for segment output is 100 Hz.<br>The lighting format is 1/2 duty and 1/2 bias.<br>The segment display is forced into the OFF state at the reset ($\overline{RES}$ = "L") and power supply.<br>This port is set to the "L" level at the BACKUP mode. | Output |  |
| COM 1<br>COM 2 | 65<br>64 | Used for LCD drive common signal output.<br>The lighting format is 1/2 duty and 1/2 bias.<br>Normal output at the reset ($\overline{RES}$ = "L") and power supply.<br>These ports are set to the "L" level at the BACKUP mode. | Output |  |
| FM IN | 74 | Used for FM VCO input (local oscillation). Note that the VCO means Voltage-Controlled Oscillation.<br>Input through capacitor coupling is required.<br>The input frequency range is between 10 MHz and 130 MHz. | Input |  |
| AM IN | 75 | Used for AM VCO input (local oscillation). Note that the VCO means Voltage-Controlled Oscillation.<br>Input through capacitor coupling is required.<br>Frequency bands can be selected by CW1 of the PLL instruction.<br>Hi (2 to 40 MHz) → SW<br>Lo (0.5 to 10 MHz) → LW, AM | | |
| HCTR | 70 | Used for universal counter input.<br>Input through capacitor coupling is required.<br>The input frequency range is between 0.4 MHz and 12 MHz.<br>This port can be used for counting FM IF and AM IF. | Input |  |
| LCTR | 71 | Used for universal counter input.<br>Input through capacitor coupling is required when the input frequency range is between 100 kHz and 500 kHz.<br>Input through capacitor coupling is not required when the input frequency range is between 1 Hz and 20 kHz.<br>This port can be used for counting AM IF. | | |

## Adjustment Locations

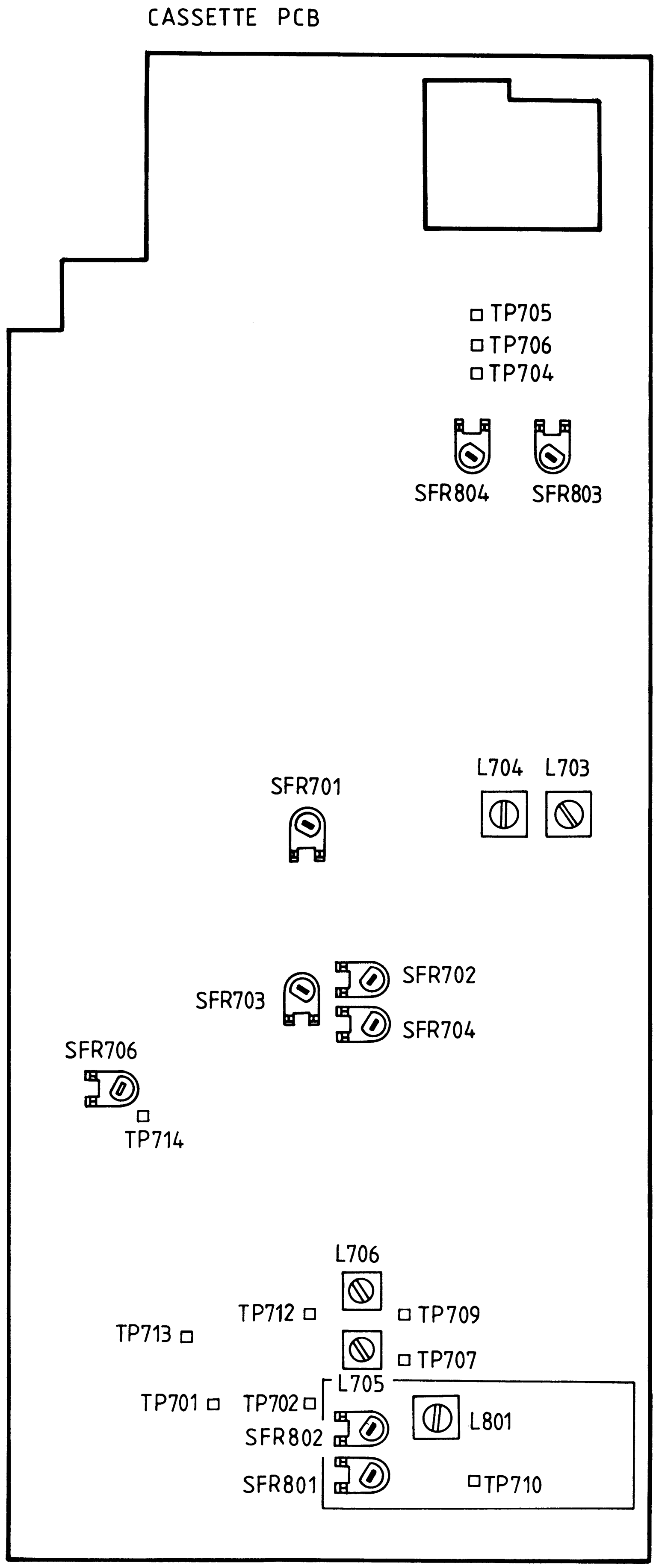

CASSETTE PCB
TP705
TP706
TP704
SFR804
SFR803
SFR701
L704
L703
SFR703
SFR702
SFR704
SFR706
TP714
L706
TP712
TP709
TP713
TP707
L705
TP701
TP702
SFR802
L801
SFR801
TP710

Figure 11

## IC102 LC7230-8307 (System Control)

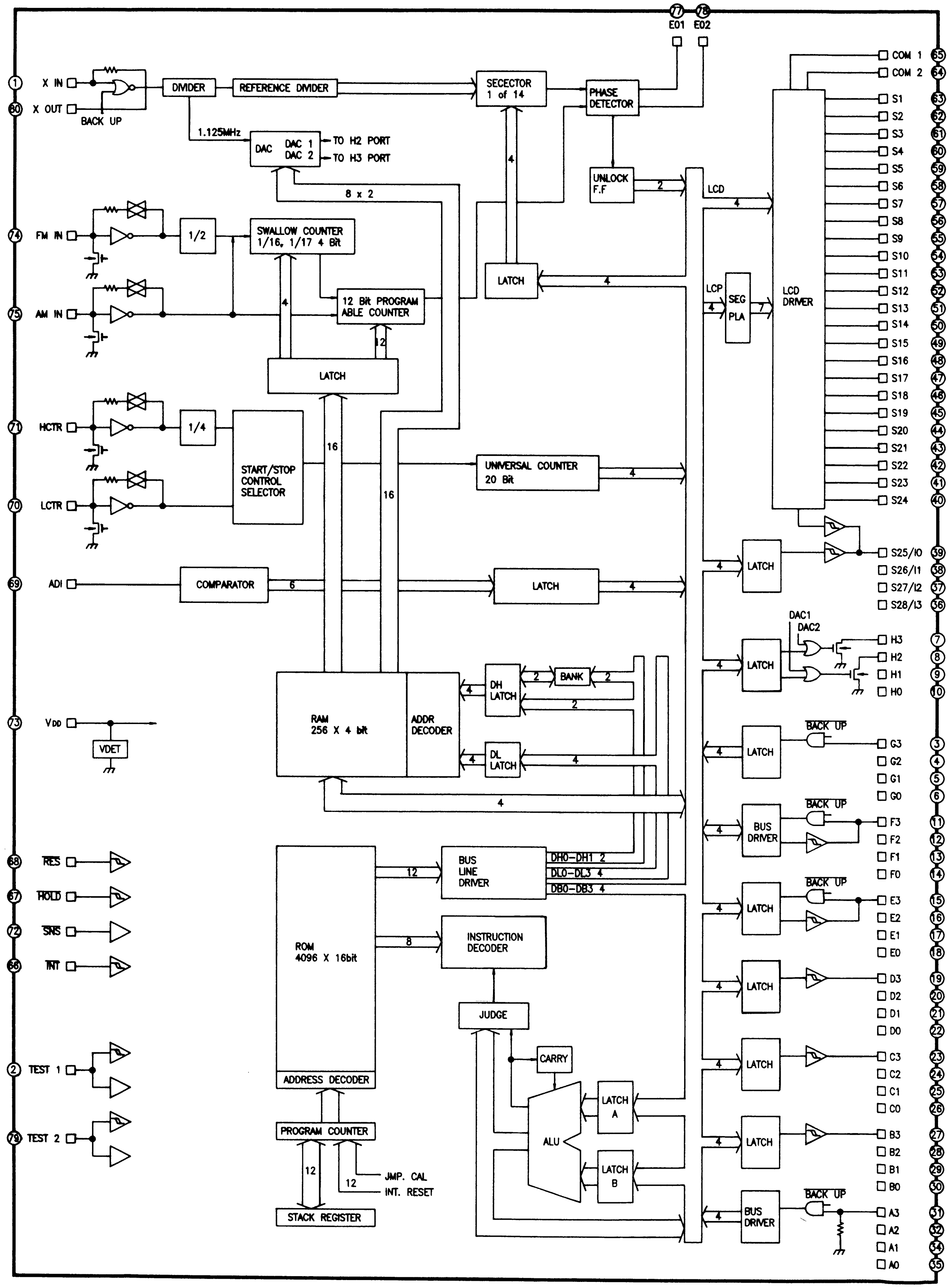
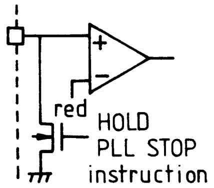
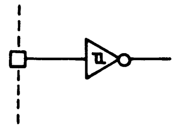
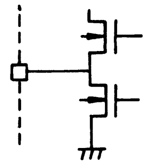
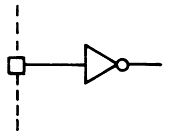
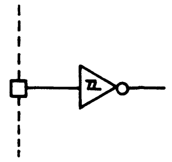
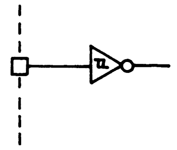
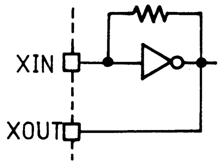

① X IN
(80) X OUT
BACK UP
DIVIDER
REFERENCE DIVIDER
1.125MHz
DAC
DAC 1
DAC 2
TO H2 PORT
TO H3 PORT
SECECTOR 1 of 14
PHASE DETECTOR
⑰ E01
⑱ E02
UNLOCK F.F
8 x 2
(74) FM IN
(75) AM IN
(71) HCTR
(70) LCTR
(69) ADI
1/2
1/4
SWALLOW COUNTER 1/16, 1/17 4 Bit
12 Bit PROGRAM ABLE COUNTER
LATCH
START/STOP CONTROL SELECTOR
UNIVERSAL COUNTER 20 Bit
COMPARATOR
LCD
LCP
SEG PLA
LCD DRIVER
(65) COM 1
(64) COM 2
(63) S1
(62) S2
(61) S3
(60) S4
(59) S5
(58) S6
(57) S7
(56) S8
(55) S9
(54) S10
(53) S11
(52) S12
(51) S13
(50) S14
(49) S15
(48) S16
(47) S17
(46) S18
(45) S19
(44) S20
(43) S21
(42) S22
(41) S23
(40) S24
(39) S25/I0
(38) S26/I1
(37) S27/I2
(36) S28/I3
DAC1
DAC2
⑦ H3
⑧ H2
⑨ H1
⑩ H0
BACK UP
③ G3
④ G2
⑤ G1
⑥ G0
BUS DRIVER
⑪ F3
⑫ F2
⑬ F1
⑭ F0
⑮ E3
⑯ E2
⑰ E1
⑱ E0
⑲ D3
⑳ D2
㉑ D1
㉒ D0
㉓ C3
㉔ C2
㉕ C1
㉖ C0
㉗ B3
㉘ B2
㉙ B1
㉚ B0
㉛ A3
㉜ A2
㉞ A1
㉟ A0
(73) VDD
VDET
RAM 256 X 4 bit
ADDR DECODER
DH LATCH
DL LATCH
BANK
(68) RES
(67) HOLD
(72) SNS
(66) INT
② TEST 1
(79) TEST 2
ROM 4096 X 16bit
ADDRESS DECODER
PROGRAM COUNTER
STACK REGISTER
JMP. CAL
INT. RESET
BUS LINE DRIVER
DH0-DH1 2
DL0-DL3 4
DB0-DB3 4
INSTRUCTION DECODER
JUDGE
CARRY
ALU
LATCH A
LATCH B
2
4
6
7
12
16
8

Figure 12

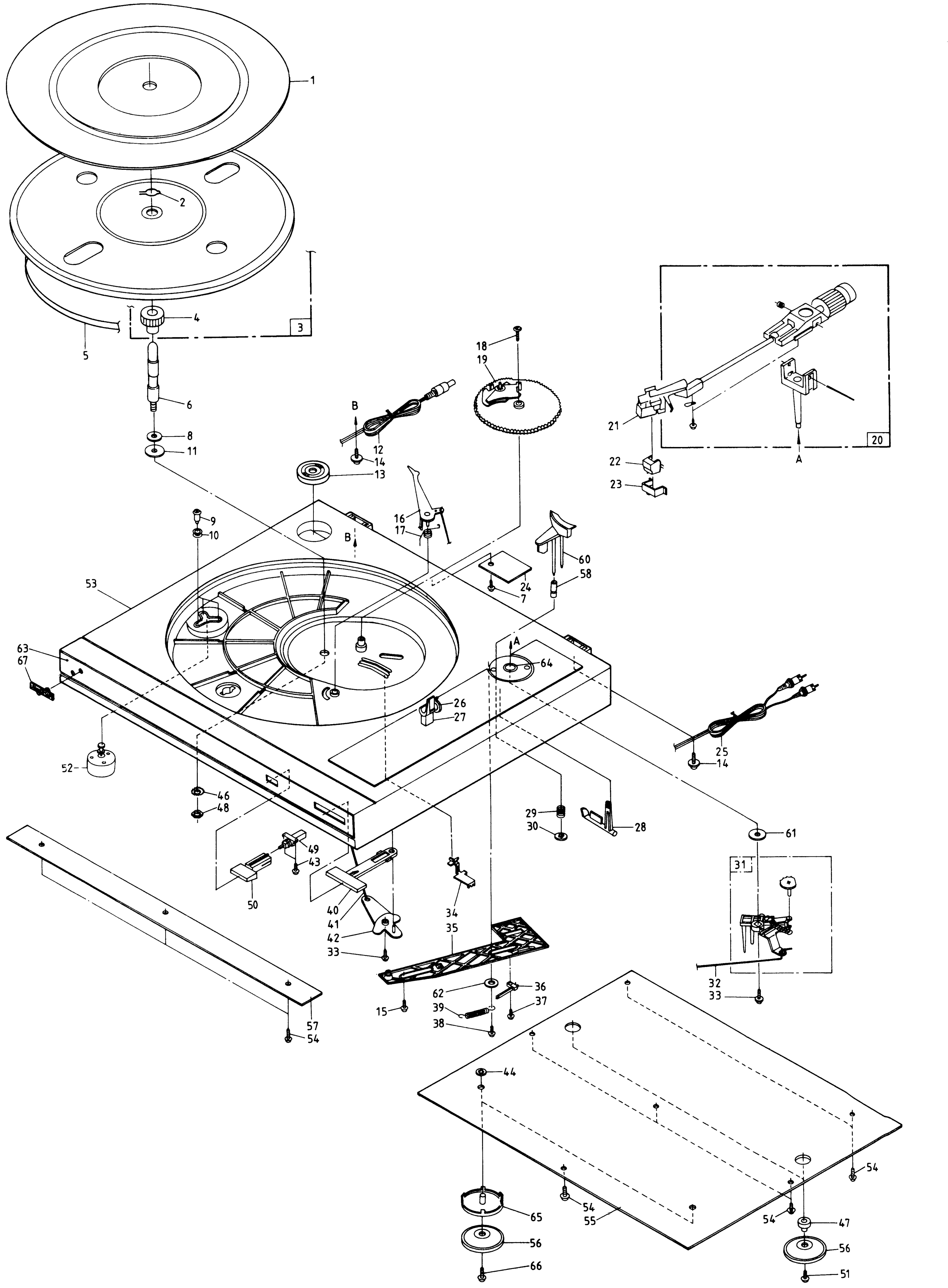
## Terminal Function IC102 (LC7230-8307) (cont)

Model No. VTCF-3021

| Pin Name | Pin No. | Functional Description | I/O | I/O Circuit Type |
|---|---|---|---|---|
| ADI | 69 | Used for AD converter input.<br>The AD converter is composed of a 6-bit sequential comparator requiring a conversion time of 1.28 milliseconds.<br>Full-scale data (3FH): VDD x 63/96. | Input |   +<br>−<br>red<br>HOLD<br>PLL STOP<br>instruction |
| INT | 66 | Used for interrupt request signal input.<br>Interrupt request becomes active if falling signal edge is detected at the port with the INTEN flag already set. Note that this flag is set by the SS instruction.. | Input |  |
| EO$_1$<br>EO$_2$ | 77<br>78 | Used for phase comparison error output. Note that the reference signal frequency and programmable divider output signal frequency are compared in their phase<br>On-chip charge pump available.<br>The EO$_1$ and the EO$_2$ have the same circuit type. | Output |  |
| SNS | 72 | Used at the BACKUP mode for power failure signal input.<br>This port can be used as a normal input port. | Input |  |
| HOLD | 67 | Used for HOLD mode request signal input.<br>The HOLD mode becomes active if the HOLD pin logic changes to "L" with the HOLDEN flag already ON. Note that this flag is set by the SS instruction.<br>The withstand voltage level of this port is "high" in order that the port can be used together with a power switch. | Input |  |
| RES | 68 | Used for the system reset request input.<br>The power up "L" level reset request signal must be applied to this port for more than 75 milliseconds.<br>The reset "L" level start request signal must be applied to this port for more than five fundamental clock cycles. | Input |  |
| XIN<br>XOUT | 1<br>80 | These two pins are used for X'tal oscillation frequency (4.5 MHz) input and output.<br>On-Chip feedback resistor available. | Input/<br>output |  |
| TEST 1<br>TEST 2 | 2<br>79 | These two pins are used for LST test signal input.<br>They should be open-circuited or connected with the VSS pin. | | |
| VDD<br>VSS | 31,73<br>76 | Power source. | | |

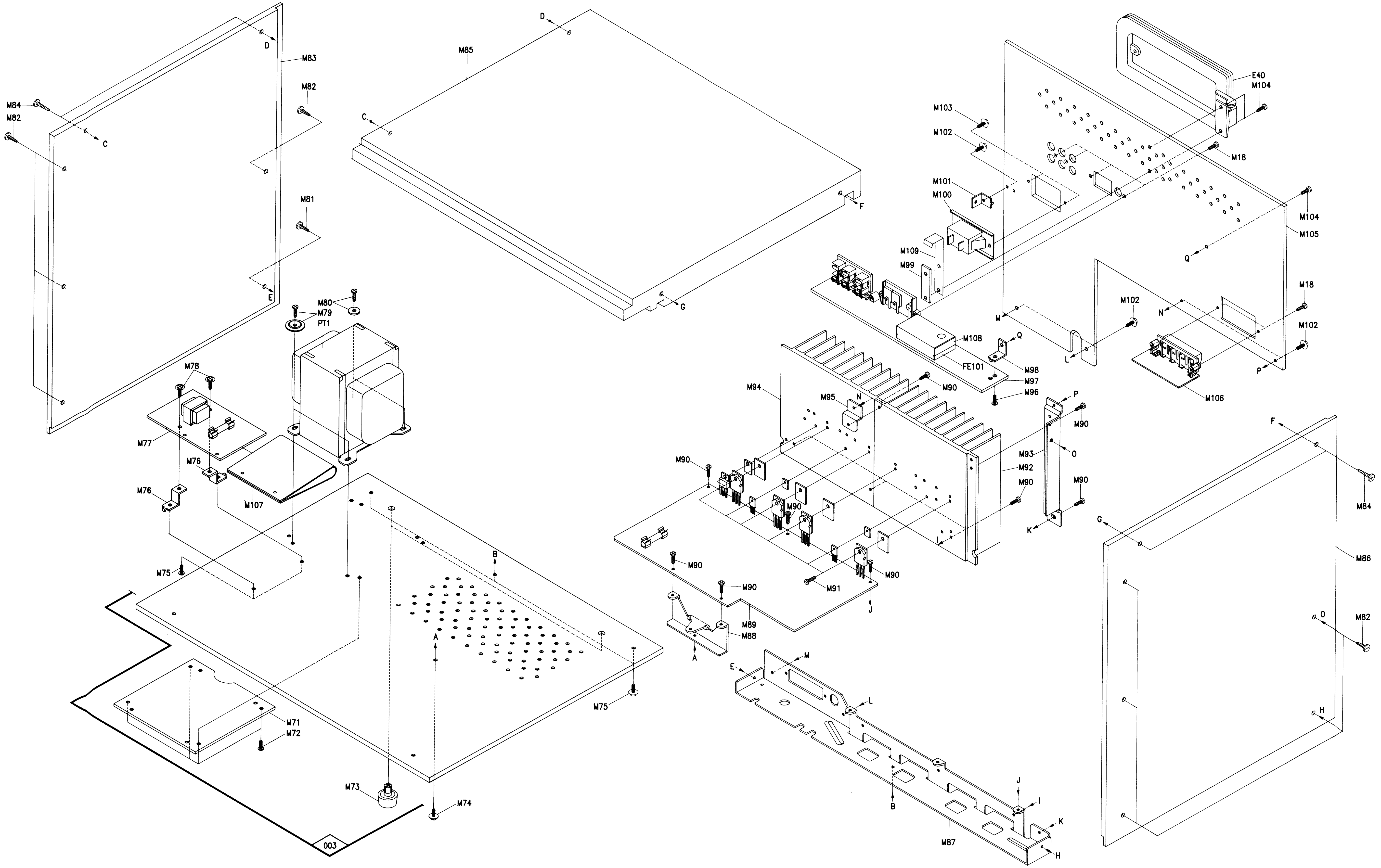
## Turntable Exploded View

Type No. P-892-92 Part No. C486030419


1
2
3
4
5
6
8
11
18
19
B
12
14
13
20
21
22
23
A
9
10
16
17
B
60
58
24
7
53
63
67
64
A
26
27
25
14
52
46
48
29
30
28
61
31
49
43
50
40
41
42
33
34
35
36
37
62
39
38
15
57
54
32
33
44
54
54
55
54
47
65
56
66
56
51

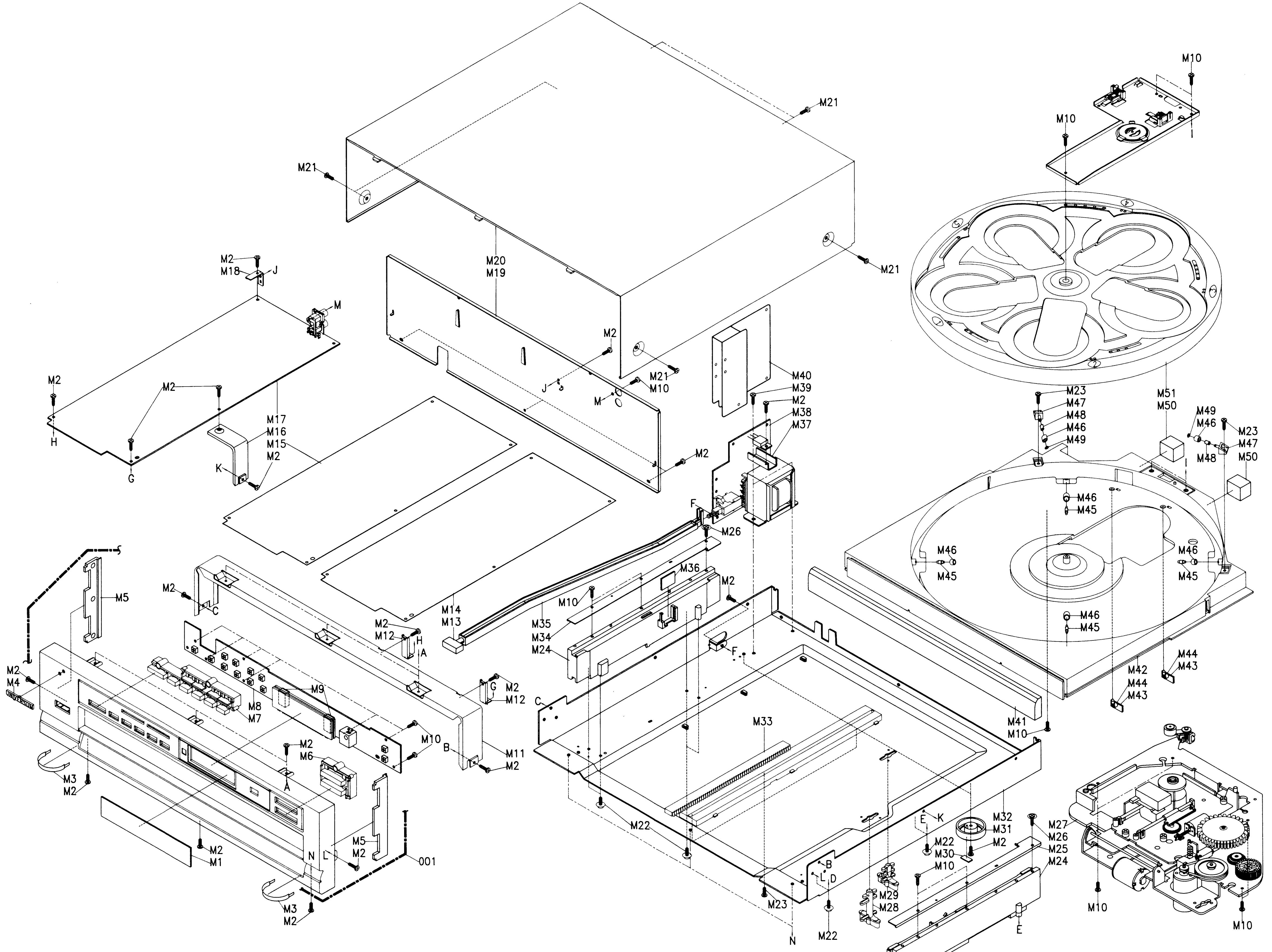
# Mechanical Expoloded View-(B)

Model No. VTCF-3021

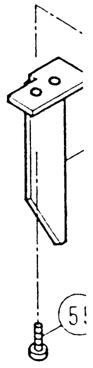

M84
M82
C
D
M83
M82
M81
E
M85
D
C
F
G
M80
M79
PT1
M78
M77
M76
M76
M107
M75
B
A
M75
M71
M72
M73
M74
003
E40
M104
M103
M102
M18
M101
M100
M104
M105
M109
M99
Q
M102
M18
N
M102
M
L
M108
Q
FE101
M98
M97
M96
M90
P
M106
M94
M95
N
P
M90
O
M93
M92
M90
M90
K
M90
M90
I
M90
M90
M91
M90
J
M89
M88
A
F
M84
G
M86
O
M82
H
E
M
L
B
J
I
K
M87
H

# Mechanical Exploded View

Model No. VTCF-3021

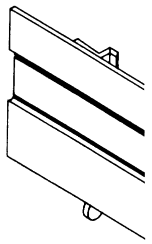


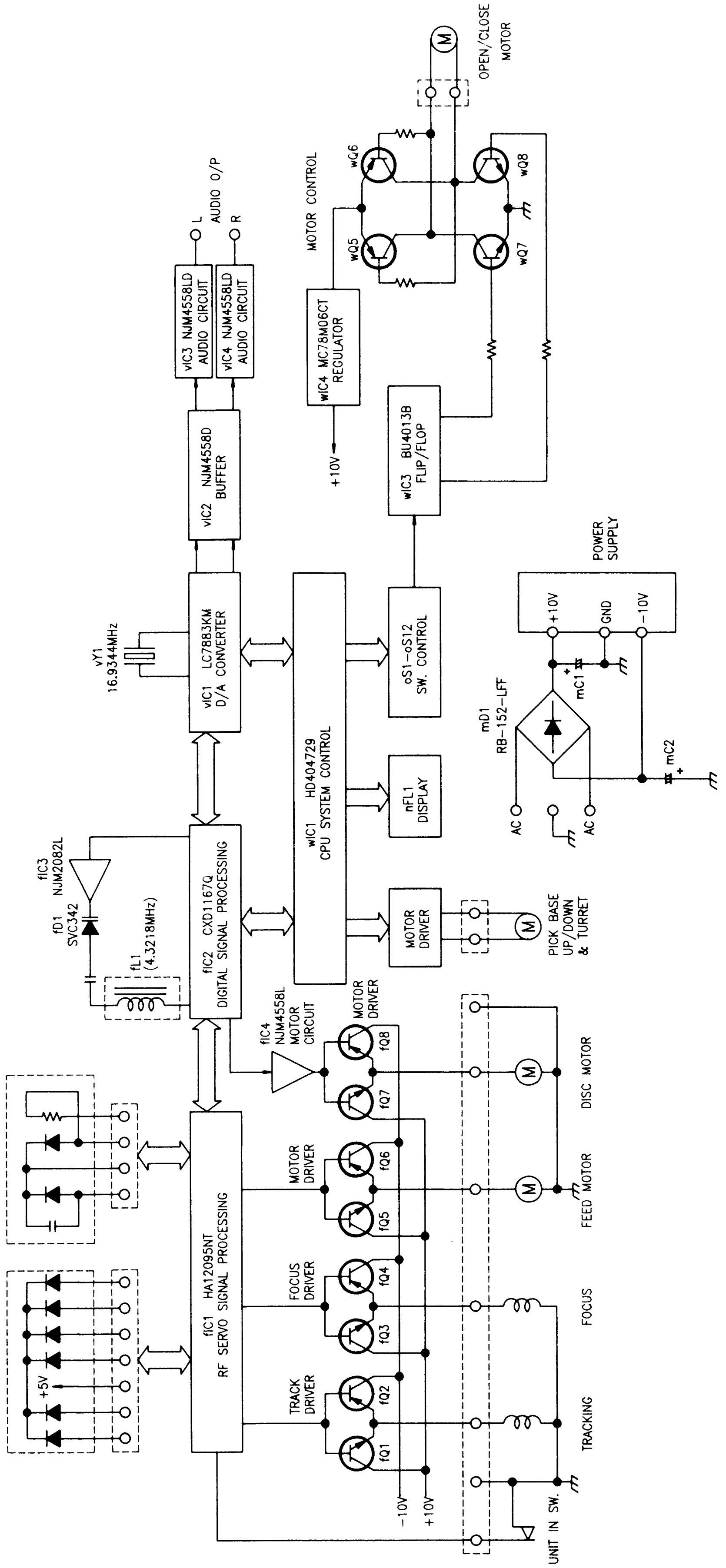
M10
M21
M10
M21
M21
M20
M19
M2
M18
J
M
M2
M21
M10
J
M
M40
M39
M2
M38
M37
M23
M47
M48
M46
M49
M51
M50
M49
M46
M23
M47
M48
M50
M2
M2
H
M17
M16
M15
M2
K
G
M2
F
M26
M46
M45
M46
M45
M46
M45
M36
M2
M10
M35
M34
M24
M14
M13
M2
M12
H
A
C
M2
M5
M2
M4
F
M9
M8
M7
G
M2
M12
M10
B
M11
M2
M2
M6
A
M3
M2
M2
M1
M5
M2
L
N
001
M3
M2
C
M33
M22
M23
B
L
D
M22
N
E
K
M22
M30
M10
M2
M31
M32
M29
M28
M27
M26
M25
M24
E
D
M46
M45
M42
M44
M43
M44
M43
M41
M10
M10
M10



## Block Diagram

Model No. VTCF-3021




OPEN/CLOSE MOTOR
M
MOTOR CONTROL
wQ6
wQ5
wQ8
wQ7
wIC4 MC78M06CT REGULATOR
+10V
wIC3 BU4013B FLIP/FLOP
L
R
AUDIO O/P
vIC3 NJM4558LD AUDIO CIRCUIT
vIC4 NJM4558LD AUDIO CIRCUIT
vIC2 NJM4558D BUFFER
vY1 16.9344MHz
vIC1 LC7883KM D/A CONVERTER
wIC1 HD404729 CPU SYSTEM CONTROL
oS1-oS12 SW. CONTROL
nFL1 DISPLAY
MOTOR DRIVER
PICK BASE UP/DOWN & TURRET
POWER SUPPLY
+10V
GND
-10V
mC1
mD1 RB-152-LFF
mC2
AC
AC
fIC3 NJM2082L
fD1 SVC342
fL1 (4.3218MHz)
fIC2 CXD1167Q DIGITAL SIGNAL PROCESSING
fIC4 NJM4558L MOTOR CIRCUIT
MOTOR DRIVER
fQ8
fQ7
DISC MOTOR
MOTOR DRIVER
fQ6
fQ5
FEED MOTOR
FOCUS DRIVER
fQ4
fQ3
FOCUS
TRACK DRIVER
fQ2
fQ1
TRACKING
-10V
+10V
UNIT IN SW.
+5V
fIC1 HA12095NT RF SERVO SIGNAL PROCESSING

## Service Instructions

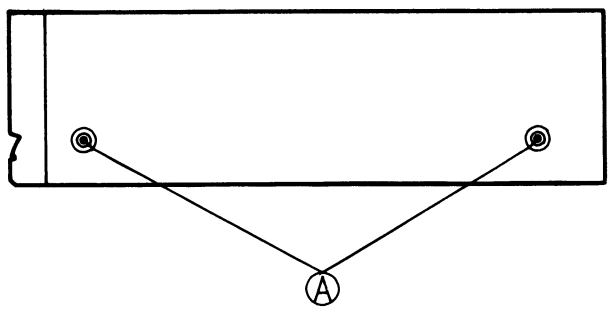


Figure 1

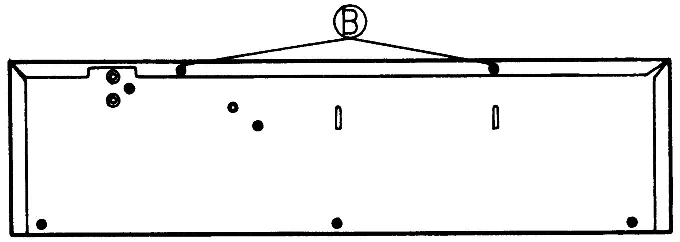


Figure 2

### TO REMOVE TOP COVER

1. **Remove 4 screws (A) from the right and left sides of the top cover. (See figure 1)**
2. **Remove 2 screws (B) from the rear panel of the top cover. (See figure 2)**
3. **Top cover can now be removed.**

### Adjustment Locations

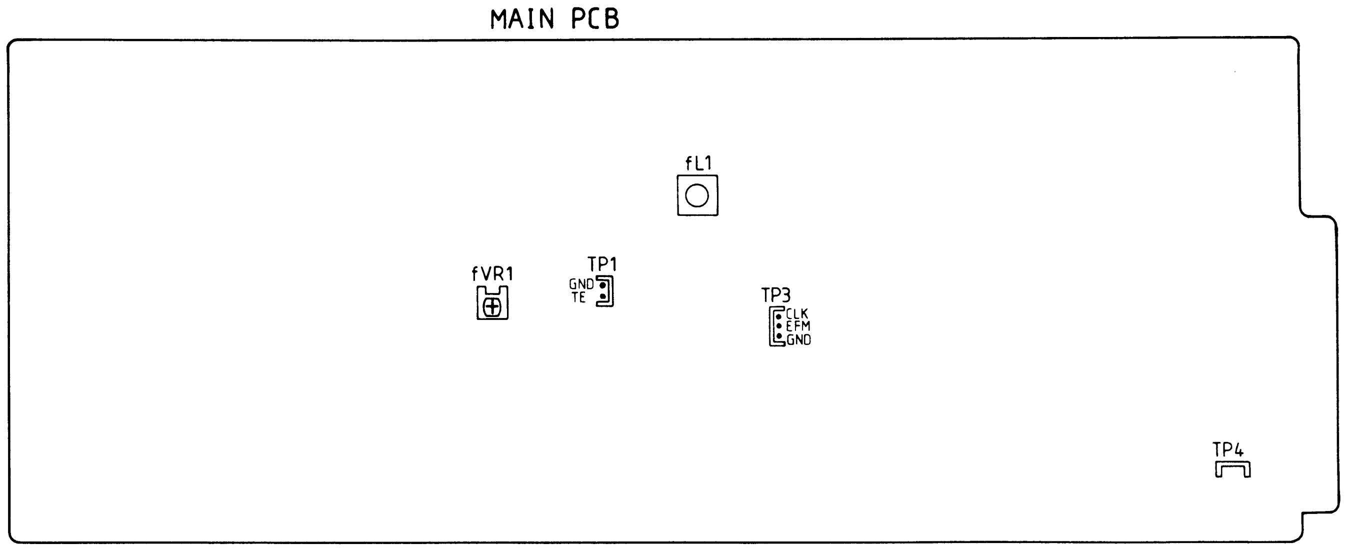
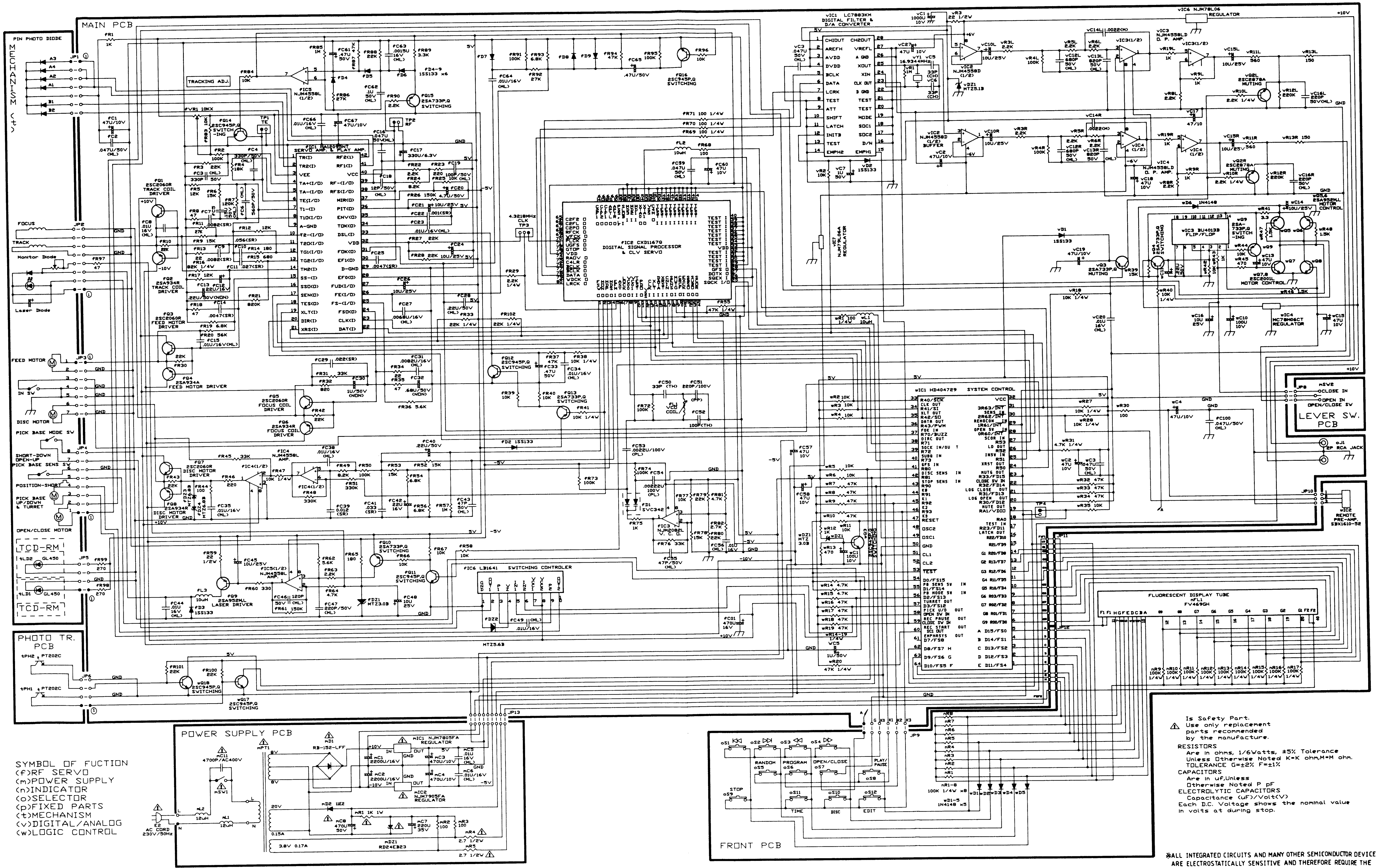

MAIN PCB
fL1
fVR1
TP1
GND
TE
TP3
CLK
EFM
GND
TP4

Figure 3

# Schematic Diagram

Model No. VTCF-3021


MAIN PCB
MECHANISM (t)
PIN PHOTO DIODE
FOCUS
TRACK
Monitor Diode
Laser Diode
FEED MOTOR
IN SW
DISC MOTOR
PICK BASE MODE SW
SHORT-DOWN OPEN-UP PICK BASE SENS SW
POSITION-SHORT
PICK BASE UP/DOWN & TURRET
OPEN/CLOSE MOTOR
TCD-RM
PHOTO TR. PCB
POWER SUPPLY PCB
FRONT PCB
LEVER SW. PCB
fIC1 CXA1081M SERVO AMP. & PLAY AMP.
fIC2 CXD1167Q DIGITAL SIGNAL PROCESSOR & CLV SERVO
fIC6 LB1641 SWITCHING CONTROLER
vIC1 LC7883KM DIGITAL FILTER & D/A CONVERTER
wIC1 HD404729 SYSTEM CONTROL
wIC3 BU4013B FLIP/FLOP
wIC4 HC78M05CT REGULATOR
vIC6 NJM78L06 REGULATOR
mIC1 NJM7805FA REGULATOR
mIC2 NJM7905FA REGULATOR
FLUORESCENT DISPLAY TUBE nFL1 FV469GH
TRACKING ADJ.
RCA JACK
REMOTE PRE-AMP. SBX1610-52
E2 AC CORD 230V/50Hz
RANDOM
PROGRAM
OPEN/CLOSE
PLAY/PAUSE
STOP
TIME
DISC
EDIT

SYMBOL OF FUCTION
(f)RF SERVO
(m)POWER SUPPLY
(n)INDICATOR
(o)SELECTOR
(p)FIXED PARTS
(t)MECHANISM
(v)DIGITAL/ANALOG
(w)LOGIC CONTROL

⚠ Is Safety Part.
Use only replacement
parts recommended
by the manufacture.

RESISTORS
Are in ohms, 1/6Watts, ±5% Tolerance
Unless Otherwise Noted K=K ohm,M=M ohm.
TOLERANCE G=±2% F=±1%

CAPACITORS
Are in uf,Unless
Otherwise Noted P pF

ELECTROLYTIC CAPACITORS
Capacitance (uF)/Volt(V)

Each D.C. Voltage shows the nominal value
in volts at during stop.

※ALL INTEGRATED CIRCUITS AND MANY OTHER SEMICONDUCTOR DEVICES ARE ELECTROSTATICALLY SENSITIVE AND THEREFORE REQUIRE THE SPECIAL HANDLING TECHNIQUES DESCRIBED UNDER THE "ELECTROSTATICALLY SENSITIVE(ES) DEVICES" SECTION OF THIS SERVICE MANUAL.※

# CD Electrical Adjustments

Model No. VTCF-3021

## EQUIPMENT

1. Test disc - Sony YEDS-18
2. Test instrument - frequency counter (5MHZ Minimum)
   oscilloscope (50MHz Minimum)

## ALIGNMENT

1. Put test disc on turret disc No.1.
2. TP4 short.
3. Power ON.
4. Disc No. on the display will read "01".

## VCO ADJUSTMENT

1. Connect GND pin of TP3 (EFM) to the negative polarity of frequency counter.
2. Connect TP3 (CLK) No. 70 pin of fIC2 (CXD1167Q), to the positive polarity of frequency counter.
3. Adjust the VCO coil (fL1) (with-in) 4.3218MHz ± 30KHz by turning around (fL1). clockwise or counter clockwise.

## TRACKING OFF-SET ADJUSTMENT

1. Press Play/Pause key.
2. Disc No. on the display will read "02".
3. Connect TP1 (TE) to the positive polarity of oscilloscope. Set to DC position.
4. Connect wIC1(HD404729) No. 18 pin to GND.
5. Adjust fVR1 waveform for peak to peak mutual symmetry. (figure 4)
6. wIC1 No. 18 pin to be return to original status.

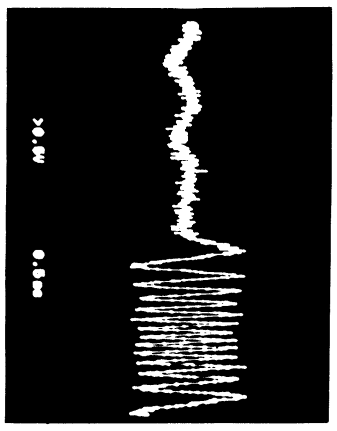


Figure 4

# Transistor/IC Voltage Chart

| REF. NO. | VOLTAGE | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| fIC1 | 0V | 0V | −5V | 1.7V | 1.7V | 0V | 0V | 0V | 0V | 0V | 0.64V | 0V | 0V | 0V | 0V | 0.62V | 5V | 5V | 5V | 5V |
| fIC2 | 0V | 0V | 0V | 0V | 4.35V | 5V | 0V | 2.43V | 0.47V | 0V | 2.53V | 0V | 5V | 5V | 0V | 5V | 5V | 5V | 5V | 0V |
| fIC3 | −2.06V | 2.53V | 2.53V | −5V | – | – | – | 5V | | | | | | | | | | | | |
| fIC4 | 0.67V | 0V | 0V | −10.2V | 0V | 0V | 0V | 9.5V | | | | | | | | | | | | |
| fIC5 | 4.4V | −2.65V | 3V | −5V | 0.2V | 0.67V | −3.5V | 5V | | | | | | | | | | | | |
| fIC6 | 0V | 0.56V | 0.75V | 1.17V | 0V | 0V | 9.5V | 9.5V | 0.75V | 0.56V | | | | | | | | | | |
| mIC1 | 10V | 5V | 0V | | | | | | | | | | | | | | | | | |
| mIC2 | −10V | −5V | 0V | | | | | | | | | | | | | | | | | |
| vIC1 | 2.5V | 5V | 5V | 5V | 2.3V | 2.1V | 2.2V | 0V | 0V | 0V | 0V | 5V | 0V | 0V | 5V | 0V | 0V | 0V | 0V | 0V |
| vIC2 | 2.5V | 2.5V | 2.5V | −6V | 2.5V | 2.5V | 2.5V | 6V | | | | | | | | | | | | |
| vIC3 | 0V | 0V | 0V | −6V | 0V | 0V | 0V | 6V | | | | | | | | | | | | |
| vIC4 | 0V | 0V | 0V | −6V | 0V | 0V | 0V | 6V | | | | | | | | | | | | |
| vIC6 | 10V | 6V | 0V | | | | | | | | | | | | | | | | | |
| vIC7 | −10V | −6V | 0V | | | | | | | | | | | | | | | | | |
| wIC1 | −6.4V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | −2.49V | 5V | 5V | 5V | 5V | −2.7V | 3.1V |
| wIC3 | 0V | 6V | 0V | 0V | 0V | 0V | 0V | – | – | – | – | – | – | 6V | | | | | | |
| wIC4 | 10V | 6V | 0V | | | | | | | | | | | | | | | | | |

| REF. NO. | VOLTAGE | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| fIC1 | 5V | 0V | 5V | 0.67V | 0V | 0.28V | 0.7V | 4.35V | 0V | 0V | 0V | 2.52V | 0V | 4.9V | 0.61V | 0.55V | −0.66V | 0V | 0V | 5V |
| fIC2 | 0V | 0V | 0V | 0V | 5V | 5V | 2.53V | 0V | 0V | 0V | 0V | 0V | 5V | 0V | 0V | 0V | 0V | 0V | 0V | 0V |
| vIC1 | 0V | 0V | 2.5V | 2.2V | 2.2V | 0V | 0V | 2.5V | | | | | | | | | | | | |
| wIC1 | 0V | 0V | 0V | 5V | 0V | 0V | 5V | 0V | 0V | 5V | 5V | 5V | 5V | 5V | 0V | 0V | 5V | 5V | 0V | 0V |

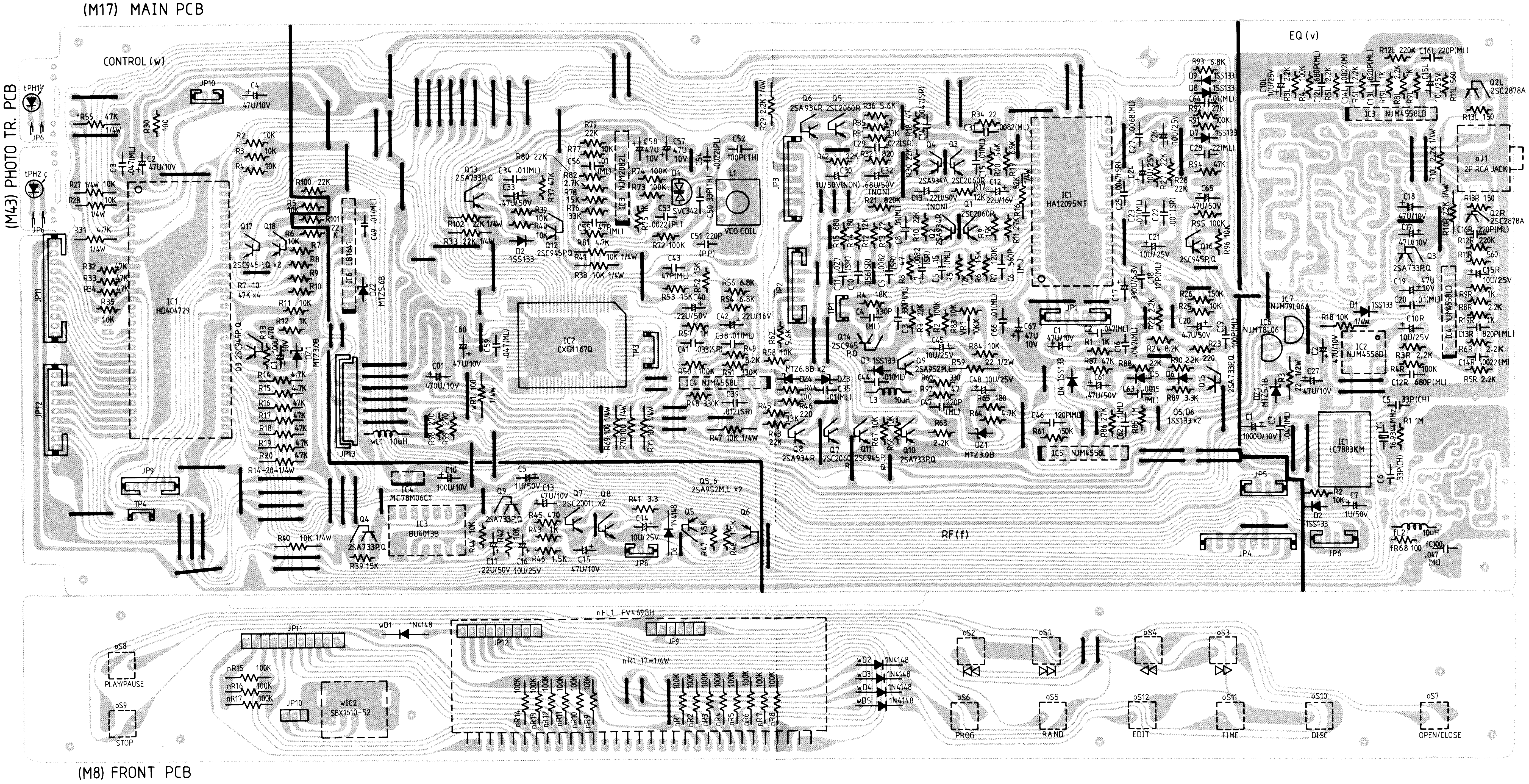
| REF. NO. | VOLTAGE | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| fIC1 | 0V | 0V | | | | | | | | | | | | | | | | | | |
| fIC2 | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 2.24V | 0V | 2.44V | 2.25V | 0V | 0V | 0V | 0V | 0V | 1.26V |
| wIC1 | 0V | 5V | 0V | 0V | 0V | 0V | 0V | 2.3V | 2.3V | 0V | 0V | 3V | 5V | 5V | 5V | 0V | 0V | 5V | 5V | 0V |

| REF. NO. | VOLTAGE | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| fIC2 | 1.26V | 3.73V | 3.76V | 1.96V | 2V | 0V | 0V | 2.53V | 2.53V | 2.3V | 5V | 5V | 5V | 5V | 2.5V | 2.27V | 2.4V | 0V | 2.52V | 2.52V |
| wIC1 | 5V | −12.2V | −10.5V | −14V | | | | | | | | | | | | | | | | |

| REF. NO. | VOLTAGE | | |
|---|---|---|---|
| | E | C | B |
| fQ1 | 0V | 9.5V | 0.64V |
| fQ2 | 0V | −10.1V | 0.64V |
| fQ3 | 0V | 9.5V | 0.62V |
| fQ4 | 0V | −10.1V | 0.62V |
| fQ5 | 0V | 9.5V | 0.67V |
| fQ6 | 0V | −10.1V | 0.67V |
| fQ7 | 0V | 9.5V | 0.64V |
| fQ8 | 0V | −10.1V | 0.64V |
| fQ9 | 5V | 1.46V | 4.47V |
| fQ10 | 5V | 4.4V | 0V |
| fQ11 | 0V | 0V | 0.7V |
| fQ12 | 0V | 0V | 0.68V |
| fQ13 | 4.48V | 4.45V | 3.81V |
| fQ14 | 0V | 0V | −3.67V |
| fQ15 | 0.65V | −5V | 0V |
| fQ16 | 0V | 0V | −3.67V |
| wQ3 | 0V | 0V | 0.7V |
| wQ4 | 6V | 0V | 6V |
| wQ5 | 6V | 0V | 0V |
| wQ6 | 6V | 0V | 0V |
| wQ7 | 0V | 0V | 0V |
| wQ8 | 0V | 0V | 0V |
| wQ9 | 6V | 0V | 0V |
| wQ17 | 0V | 0V | 0.67V |
| wQ18 | 0V | 0V | 5V |
| vQ2L | 0V | 0V | 0.75V |
| vQ2R | 0V | 0V | 0.75V |
| vQ3 | 5V | 0V | 5V |

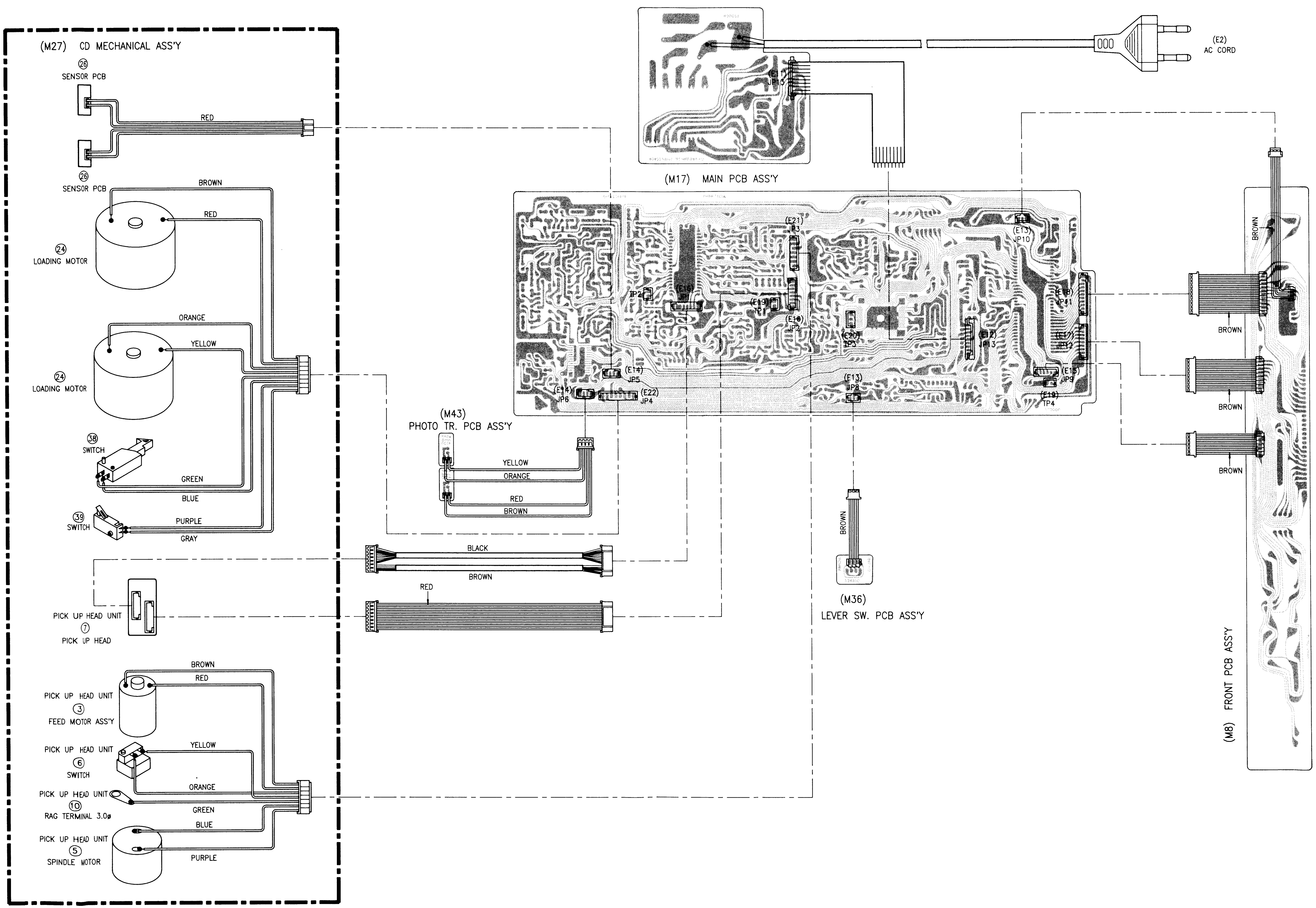
## P C Board-Solder Side

Model No. VTCF-3021


(M17) MAIN PCB
(M43) PHOTO TR. PCB
(M8) FRONT PCB
CONTROL (w)
EQ (v)
RF (f)
IC1 HD404729
IC2 CXD1167Q
IC3 BU4013B
IC4 MC78M06CT
IC6 LB1641
IC3 NJM2082L
IC4 NJM4558L
IC5 NJM4558L
IC1 HA12095NT
IC7 NJM79L06A
IC6 NJM78L06
IC2 NJM4558D
IC3 NJM4558LD
IC4 NJM4558LD
IC1 LC7883KM
L1 VCO COIL
oJ1 2P RCA JACK
nFL1 FV469GH
wIC2 SBX1610-52
JP1
JP2
JP3
JP4
JP5
JP6
JP8
JP9
JP10
JP11
JP12
JP13
TP1
TP3
TP4
tPH1
tPH2
PLAY/PAUSE
STOP
PROG
RAND
EDIT
TIME
DISC
OPEN/CLOSE
oS1
oS2
oS3
oS4
oS5
oS6
oS7
oS8
oS9
oS10
oS11
oS12
wD1 1N4148
wD2 1N4148
wD3 1N4148
wD4 1N4148
wD5 1N4148
nR1-17=1/4W
R14-20=1/4W
Q5,6 2SA952M,L x2
D5,D6 1SS133 x2
MTZ6.8B x2
2SC945P,Q x2
2SC2001L x2

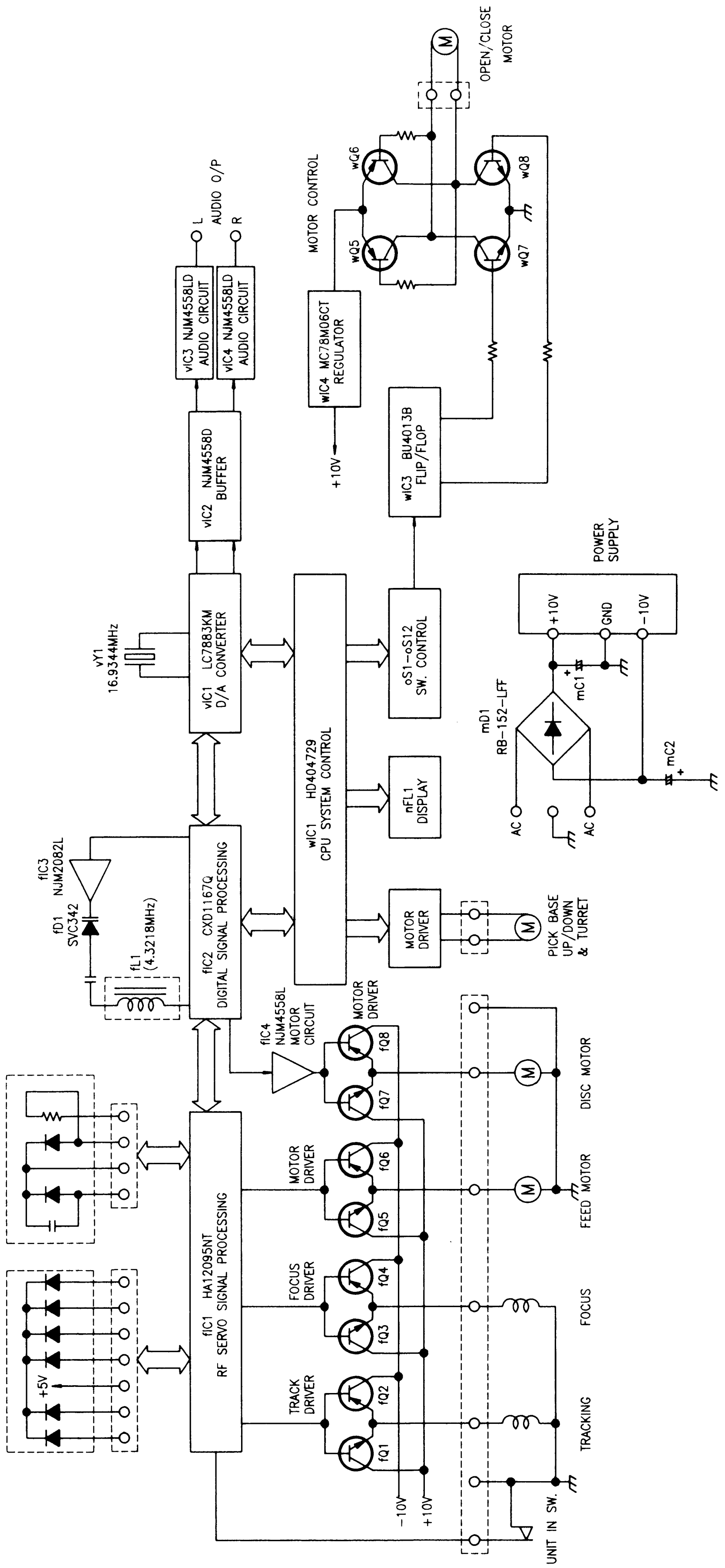
# Wiring Diagram-Component Side

Model No. VTCF-3021


(M38) POWER SUPPLY PCB ASS'Y
(E2)
AC CORD
(E11)
JP13
(M17) MAIN PCB ASS'Y
(M27) CD MECHANICAL ASS'Y
㉖
SENSOR PCB
RED
㉖
SENSOR PCB
BROWN
RED
㉔
LOADING MOTOR
ORANGE
YELLOW
㉔
LOADING MOTOR
㊳
SWITCH
GREEN
BLUE
㊴
SWITCH
PURPLE
GRAY
PICK UP HEAD UNIT
⑦
PICK UP HEAD
BROWN
RED
PICK UP HEAD UNIT
③
FEED MOTOR ASS'Y
YELLOW
PICK UP HEAD UNIT
⑥
SWITCH
ORANGE
PICK UP HEAD UNIT
⑩
RAG TERMINAL 3.0ø
GREEN
BLUE
PICK UP HEAD UNIT
⑤
SPINDLE MOTOR
PURPLE
(E21)
JP3
(E13)
JP10
(E10)
JP1
TP2
(E19)
TP1
(E18)
JP2
(E20)
JP3
(E12)
JP13
(E16)
JP11
(E17)
JP12
(E14)
JP5
(E14)
JP6
(E22)
JP4
(E13)
JP8
(E15)
JP9
(E19)
TP4
(M43)
PHOTO TR. PCB ASS'Y
YELLOW
ORANGE
RED
BROWN
BLACK
BROWN
RED
BROWN
(M36)
LEVER SW. PCB ASS'Y
BROWN
BROWN
BROWN
BROWN
(M8) FRONT PCB ASS'Y

## Block Diagram

Model No. VTCF-3021


M
OPEN/CLOSE MOTOR
MOTOR CONTROL
wQ6
wQ8
wQ5
wQ7
wIC4 MC78M06CT REGULATOR
+10V
wIC3 BU4013B FLIP/FLOP
AUDIO O/P
L
R
vIC3 NJM4558LD AUDIO CIRCUIT
vIC4 NJM4558LD AUDIO CIRCUIT
vIC2 NJM4558D BUFFER
vIC1 LC7883KM D/A CONVERTER
vY1 16.9344MHz
wIC1 HD404729 CPU SYSTEM CONTROL
oS1-oS12 SW. CONTROL
nFL1 DISPLAY
MOTOR DRIVER
PICK BASE UP/DOWN & TURRET
POWER SUPPLY
+10V
GND
-10V
mD1 RB-152-LFF
mC1
mC2
AC
AC
fIC3 NJM2082L
fD1 SVC342
fL1 (4.3218MHz)
fIC2 CXD1167Q DIGITAL SIGNAL PROCESSING
fIC4 NJM4558L MOTOR CIRCUIT
MOTOR DRIVER
fQ8
fQ7
DISC MOTOR
MOTOR DRIVER
fQ6
fQ5
FEED MOTOR
FOCUS DRIVER
fQ4
fQ3
FOCUS
TRACK DRIVER
fQ2
fQ1
TRACKING
-10V
+10V
UNIT IN SW.
+5V
fIC1 HA12095NT RF SERVO SIGNAL PROCESSING

## Service Instructions

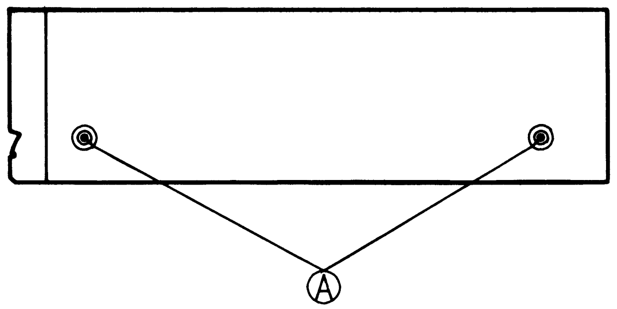


Figure 1

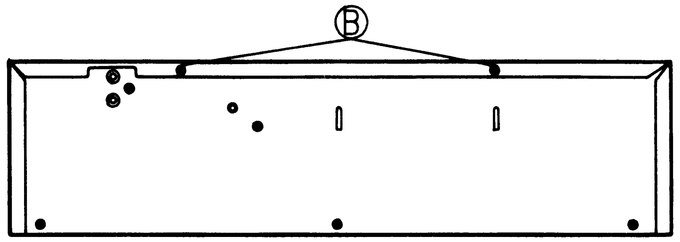


Figure 2

### TO REMOVE TOP COVER

1. **Remove 4 screws (A) from the right and left sides of the top cover. (See figure 1)**
2. **Remove 2 screws (B) from the rear panel of the top cover. (See figure 2)**
3. **Top cover can now be removed.**

## Adjustment Locations

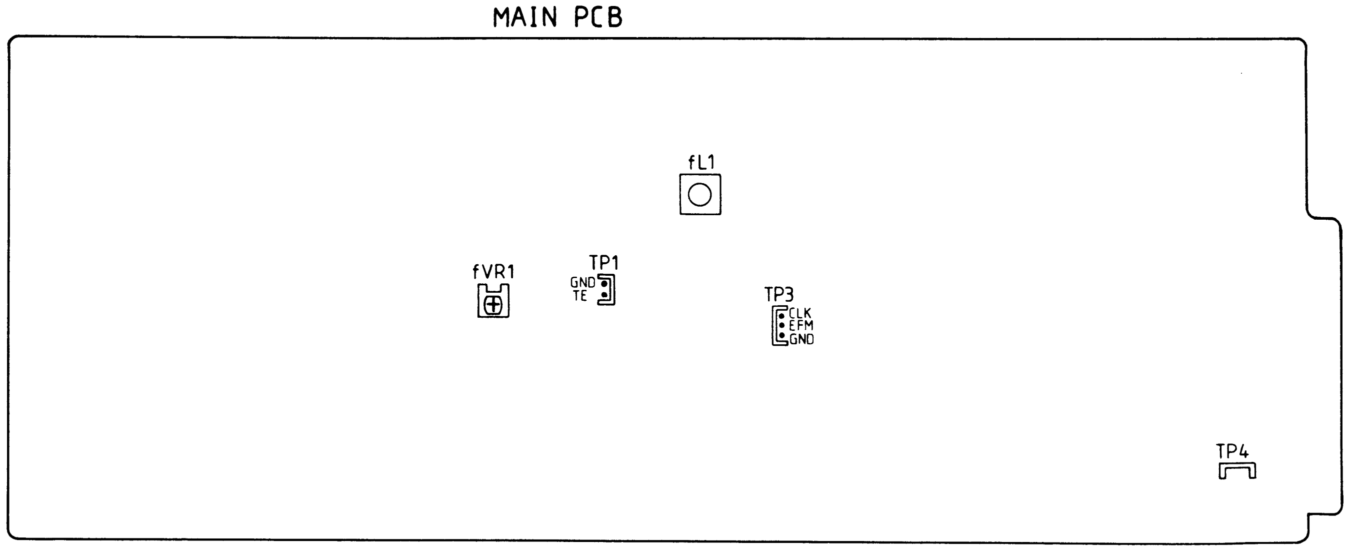
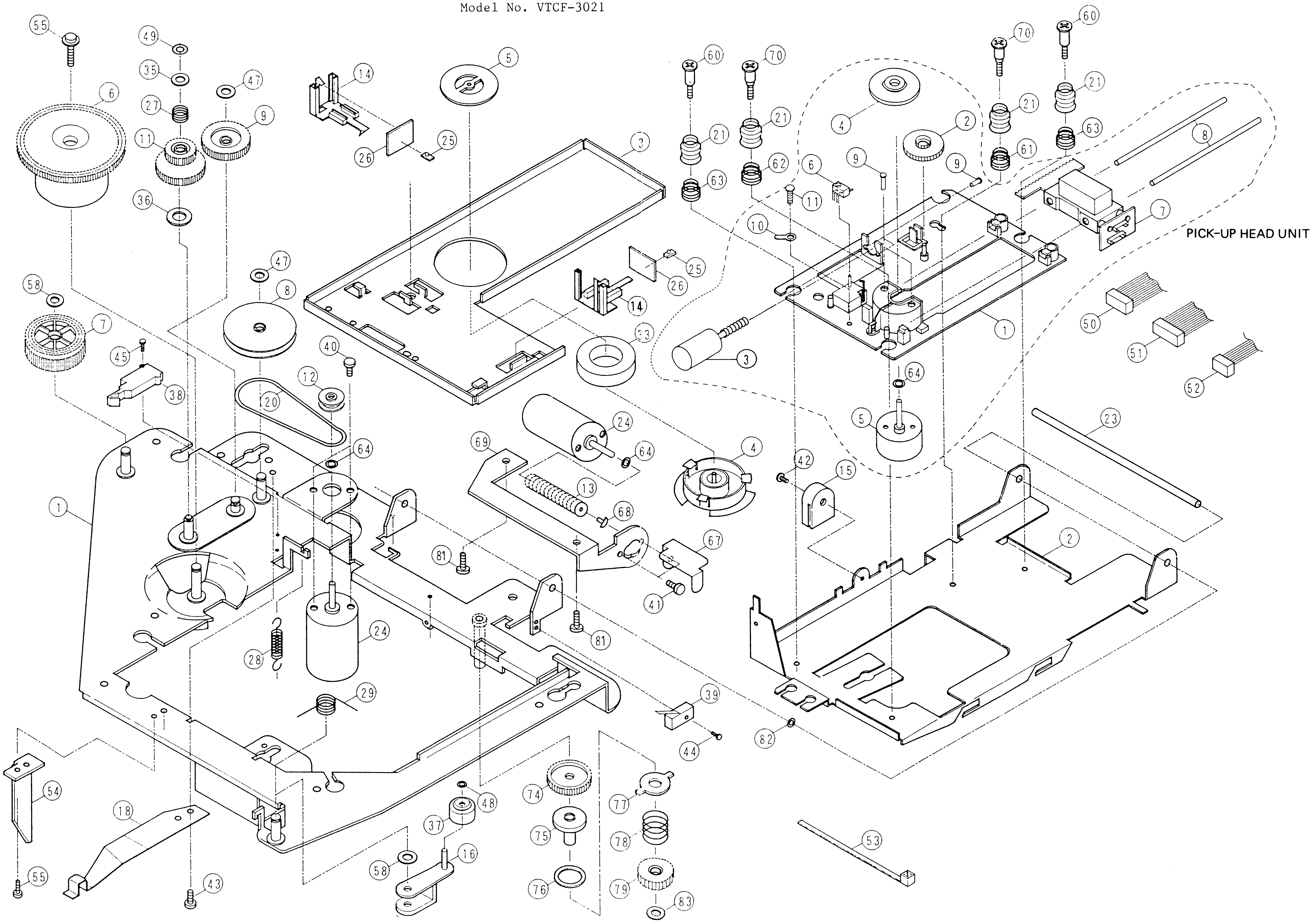

MAIN PCB
fL1
fVR1
TP1
GND
TE
TP3
CLK
EFM
GND
TP4

Figure 3

# CD Play Exploded View

Type No. TCD-RM5CTL    Part No. C486040407

Model No. VTCF-3021

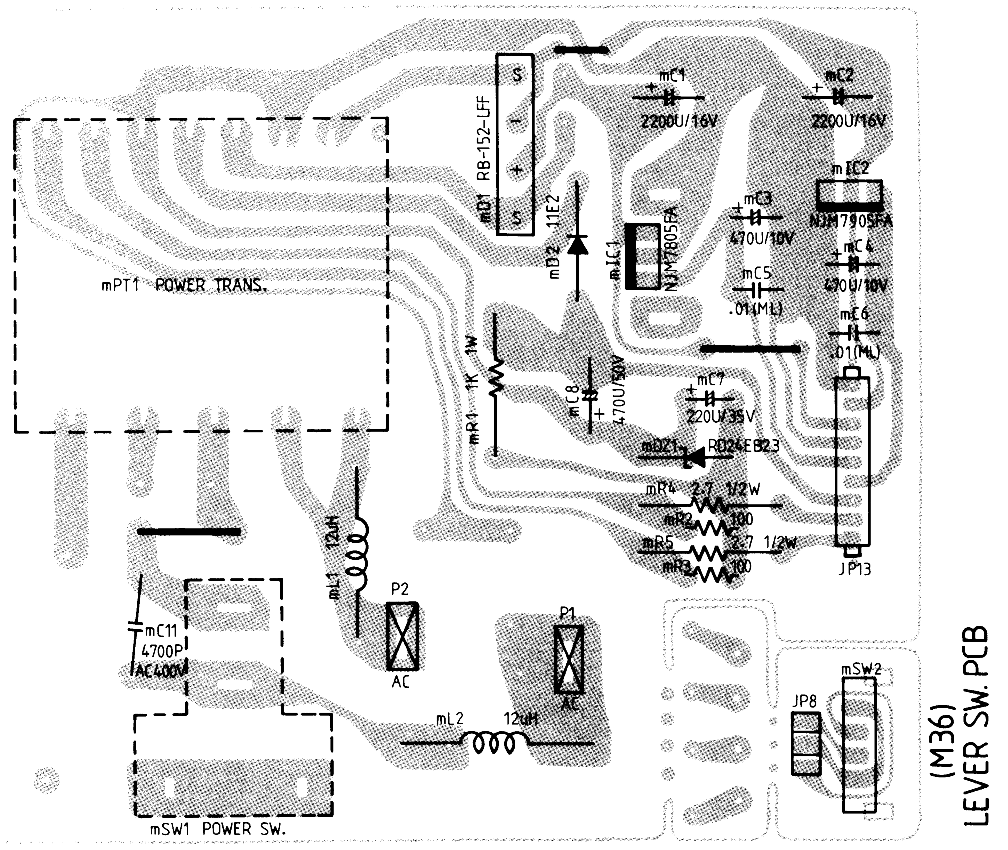

55
49
35
47
27
6
9
11
36
14
26
25
5
3
60
70
21
62
63
4
2
6
9
11
10
61
8
7
PICK-UP HEAD UNIT
25
26
14
33
1
3
50
51
52
64
58
7
45
38
47
8
40
12
20
64
24
64
69
13
68
4
42
15
5
23
1
81
67
41
24
28
81
2
29
39
44
82
54
18
55
43
48
37
74
75
76
77
78
79
83
58
16
53

| ZEILE | POSITION | SYM BEZEICHNUNG | ET-NUMMER |
|---|---|---|---|
| 79 | M73 | FUSS,HINTEN | 781 449 4 |
| 80 | M83 | SEITENTEIL,LINKS | 781 450 2 |
| 81 | M85 | OBERTEIL | 781 451 0 |
| 82 | M86 | SEITENTEIL,RECHTS | 781 452 8 |
| 83 | M105 | RUECKWAND | 781 453 6 |
| 84 | | | |
| 85 | | GEHAEUSE U. BEDIENTEILE CD : | |
| 86 | | | |
| 87 | 001 | FRONTBLENDE KPL. | 781 528 5 |
| 88 | M1 | FRONTSCHEIBE FUER DISPLAY-CD | 781 797 6 |
| 89 | M3 | ZIERSTREIFEN FUER FUSS | 781 536 8 |
| 90 | M4 | NAMENSZUG UNIVERSUM | 781 537 6 |
| 91 | M6 | KNOPF,PLAY-STOP | 781 531 9 |
| 92 | M7 | KNOPFLEISTE,10-FACH | 781 530 1 |
| 93 | M8 | BEDIENPLATINE | 781 798 4 |
| 94 | M13 | KNOPF,POWER | 781 542 6 |
| 95 | M17 | CD-PLATINE | 781 549 1 |
| 96 | M19 | RUECKWAND | 781 534 3 |
| 97 | M20 | FUSS | 781 535 0 |
| 98 | M27 | CD-MECHANIK | 781 541 8 |
| 99 | M28 | SCHALTHEBEL B | 781 799 2 |
| 100 | M29 | SCHALTHEBEL A | 781 800 8 |
| 101 | M31 | FUSS | 781 535 0 |
| 102 | M33 | ZAHNSTANGE | 781 538 4 |
| 103 | M35 | STANGE FUER POWERKNOPF | 781 801 6 |
| 104 | M41 | BLENDE FUER SCHLITTEN | 781 532 7 |
| 105 | M42 | SCHLITTEN | 781 802 4 |
| 106 | M45 | ROLLE "A" | 781 539 2 |
| 107 | M46 | GUMMIRING | 781 803 2 |
| 108 | M47 | ROLLENHALTER | 781 804 0 |
| 109 | M48 | ROLLE "B" | 781 540 0 |
| 110 | M51 | PLATTENTELLER | 781 529 3 |
| 111 | | | |
| 112 | | CD-MECHANIK : | |
| 113 | | | |
| 114 | | CD-MECHANIK | 781 541 8 |
| 115 | 4 | MAGNETHALTER | 781 805 7 |
| 116 | 5 | HALTERRING | 781 806 5 |
| 117 | 7 | ZAHNRAD | 781 807 3 |
| 118 | 8 | RIEMENSCHEIBE,GROSS | 781 808 1 |
| 119 | 9 | ZAHNRAD | 781 809 9 |
| 120 | 11 | ZAHNRAD | 781 810 7 |
| 121 | 12 | MOTORPULLY | 781 811 5 |
| 122 | 13 | SCHNECKENSPINDEL | 781 812 3 |
| 123 | 16 | HEBEL FUER ANDRUCKROLLE | 781 813 1 |
| 124 | 18 | BLATTFEDER | 781 814 9 |
| 125 | 20 | RIEMEN | 781 815 6 |
| 126 | 24 | MOTOR 13FB12F | 781 816 4 |
| 127 | 25 | LED GL 450 | 781 817 2 |
| 128 | 27 | FEDER FUER ZAHNRAD | 781 818 0 |
| 129 | 28 | FEDER | 781 819 8 |
| 130 | 29 | FEDER FUER ANDRUCKROLLE | 781 820 6 |
| 131 | 33 | MAGNET | 781 821 4 |
| 132 | 36 | UNTERLEGSCHEIBE | 781 822 2 |
| 133 | 37 | ANDRUCKROLLE | 781 823 0 |
| 134 | 38 | MIKROSCHALTER | 781 824 8 |
| 135 | 39 | BLATTFEDERSCHALTER | 781 825 5 |
| 136 | 64 | SCHEIBE | 781 826 3 |
| 137 | 68 | KAPPE FUER SPINDEL | 781 827 1 |
| 138 | 74 | ZAHNRAD | 781 828 9 |
| 139 | 75 | ZWISCHENSTUECK | 781 829 7 |
| 140 | 76 | UNTERLEGSCHEIBE | 781 830 5 |
| 141 | 77 | MITNEHMEN | 781 831 3 |
| 142 | 78 | FEDER | 781 832 1 |
| 143 | 79 | ZAHNRAD | 781 833 9 |
| 144 | 83 | UNTERLEGSCHEIBE | 781 834 7 |
| 145 | | | |
| 146 | | PICK-UP CHASSIS : | |
| 147 | | | |
| 148 | 2 | ZAHNRAD FUER LASER | 781 835 4 |
| 149 | 3 | MOTOR MIT SCHNECKENRAD RD-050Y | 746 694 9 |
| 150 | 4 | TELLER FUER CD-PLATTE | 781 836 2 |
| 151 | 5 | MOTOR 310T114 | 781 837 0 |
| 152 | 6 | MIKROSCHALTER | 781 838 8 |
| 153 | 7 | LASERABTASTEINHEIT HOP-M3 | 746 739 2 |
| 154 | | | |
| 155 | | CASSETTENLAUFWERK : | |
| 156 | | | |
| 157 | | CASSETTENLAUFWERK | 781 439 5 |
| 158 | 2 | SCHALTHEBEL | 742 618 2 |
| 159 | 3 | SCHALTSCHIENE | 742 619 0 |
| 160 | 4 | TASTENSCHIEBER,REC. | 742 620 8 |
| 161 | 5 | TASTENSCHIEBER,PLAY | 742 621 6 |
| 162 | 6 | TASTENSCHIEBER,REW. | 742 622 4 |
| 163 | 7 | TASTENSCHIEBER,F.F. | 742 623 2 |
| 164 | 10 | PROFILFEDER | 742 626 5 |
| 165 | 11 | PAUSERASTHEBEL | 745 120 6 |
| 166 | 12 | DRUCKFEDER,PAUSERAST | 742 628 1 |
| 167 | 13 | STOPFEN,PAUSERAST | 742 629 9 |
| 168 | 14 | PROFILFEDER | 742 630 7 |
| 169 | 16 | PROFILFEDER | 742 631 5 |
| 170 | 17 | PROFILFEDER | 742 632 3 |
| 171 | 22 | PROFILFEDER | 742 636 4 |
| 172 | 23 | BLATTFEDERSCHALTER | 745 291 5 |
| 173 | 29 | PROFILFEDER | 742 638 0 |
| 174 | 30 | PROFILFEDER | 742 639 8 |
| 175 | 34 | FEDER | 999 548 1 |
| 176 | 35 | GA-ROLLE | 742 641 4 |
| 177 | 38 | FUEHLHEBEL | 742 642 2 |
| 178 | 39 | RUTSCHKUPPLUNG KPL. | 743 009 3 |
| 179 | 40 | RIEMEN 0,9 X 35MM | 998 345 3 |
| 180 | 43 | SCHWUNGRAD 2 | 742 645 5 |
| 181 | 44 | SCHWUNGRAD 1 | 742 644 8 |
| 182 | 45 | PROFILFEDER | 742 646 3 |
| 183 | 47 | ZAHNRAD | 742 648 9 |
| 184 | 49 | ZAHNRAD,F.F. | 742 649 7 |
| 185 | 50 | FEDER | 999 560 6 |
| 186 | 51 | ABWICKELTELLER | 742 650 5 |
| 187 | 52 | AUFWICKELTELLER | 742 651 3 |
| 188 | 53 | SCHALTFUEHLER | 742 652 1 |
| 189 | 58 | PULLEY 2 8,5 8,5 10,0(PLASTIK) | 742 768 5 |
| 190 | 59 | RIEMEN | 742 684 4 |
| 191 | 60 | BUERSTE FUER RIEMEN | 742 371 8 |
| 192 | 62 | AUSWURFHEBEL | 743 463 2 |
| 193 | 64 | FEDER | 999 564 8 |
| 194 | 65 | WIEDERGABEKOPF | 781 489 0 |
| 195 | 66 | A/W-KOPF | 781 490 8 |
| 196 | 67 | LOESCHKOPF | 781 491 6 |
| 197 | 68 | MOTOR,SHU-2L | 745 055 4 |
| 198 | 69 | AUFN.SPERRE | 742 654 7 |
| 199 | 85 | SICHERUNGSSCHEIBE 2 MM | 987 250 8 |
| 200 | 96 | MIKROSCHALTER | 781 492 4 |
| 201 | 99 | MIKROSCHALTER | 781 493 2 |
| 202 | | | |
| 203 | | ELEKTRISCHE TEILE RDF U. TB : | |
| 204 | | | |
| 205 | C166 | STUETZELKO 0.1F 5.5V | 746 821 8 |
| 206 | C550,551 | ELKO 3300 UF/80V | 781 364 5 |
| 207 | C552 | ELKO 2200 UF/50V | 781 365 2 |
| 208 | CF101,102 | FM-KERAMIKFILTER SFE 10.7 MS3 | 733 843 7 |
| 209 | CF103 | KERAMIK-FILTER SFP 450G | 781 386 8 |
| 210 | CX101 | QUARZ 4.5000 MHZ | 733 845 2 |
| 211 | D101 | CAP.-DIODE KV 1236 Z1 | 733 388 3 |
| 212 | D102,103 | DIODE 1 N 4148 | 175 540 4 |
| 213 | D105,334 | Z-DIODE RD 5,6 EB1 | 965 944 2 |
| 214 | D106,108 | DIODE 1 SS 176 | 988 259 8 |
| 215 | D109-303 | DIODE 1 N 4148 | 175 540 4 |
| 216 | D201 | DIODE PH 302 B | 959 847 5 |
| 217 | D309-333 | LED EL 1254 YT | 781 381 9 |
| 218 | D401-403 | DIODE 1 N 4002 | 921 523 7 |
| 219 | D501 | ZENERDIODE ZY 18 | 928 926 5 |
| 220 | D503-516 | DIODE 1 N 4148 | 175 540 4 |
| 221 | D517 | DIODE 1 N 4002 | 921 523 7 |
| 222 | D518 | ZENERDIODE ZPD 15 | 176 854 8 |
| 223 | D520,521 | GLEICHRICHTER B 20 SL | 733 235 6 |
| 224 | D522 | GLEICHRICHTER KBU 6D | 721 027 1 |
| 225 | D601,808 | LED LTL 3210 | 781 382 7 |
| 226 | D701-704 | DIODE 1 N 4148 | 175 540 4 |
| 227 | D715,716 | DIODE 1 N 4002 | 921 523 7 |
| 228 | D717-804 | DIODE 1 N 4148 | 175 540 4 |
| 229 | D805 | ZENERDIODE RD 12 EB | 921 587 2 |
| 230 | D806,807 | DIODE 1 N 4148 | 175 540 4 |
| 231 | D809 | LED EL 1254 YT | 781 381 9 |
| 232 | D901-912 | DIODE 1 N 4148 | 175 540 4 |
| 233 | FE101 | FM-TUNER | 781 408 0 |
| 234 | FR301 | WIDERSTAND 1,0 OHM 0,50 W SI | 927 590 0 |
| 235 | FR501,502 | WIDERSTAND 82.0 OHM 0.50 W SI | 781 362 9 |
| 236 | FR503-508 | WIDERSTAND 47,0 OHM 0,25 W SI | 965 817 0 |
| 237 | FR513,514 | WIDERSTAND 330.0 OHM 0.50 W SI | 781 363 7 |
| 238 | HJ501 | KLINKENBUCHSE 6.3 MM STEREO | 781 404 9 |
| 239 | IC101 | IC LA 1805 | 747 172 5 |
| 240 | IC102 | IC LC 7230-8307 | 781 366 0 |
| 241 | IC103 | IC UPC 78 L 05 | 950 533 0 |
| 242 | IC201 | IC UPC 14904 A | 723 092 3 |
| 243 | IC301 | IC LC 7821 | 745 498 6 |

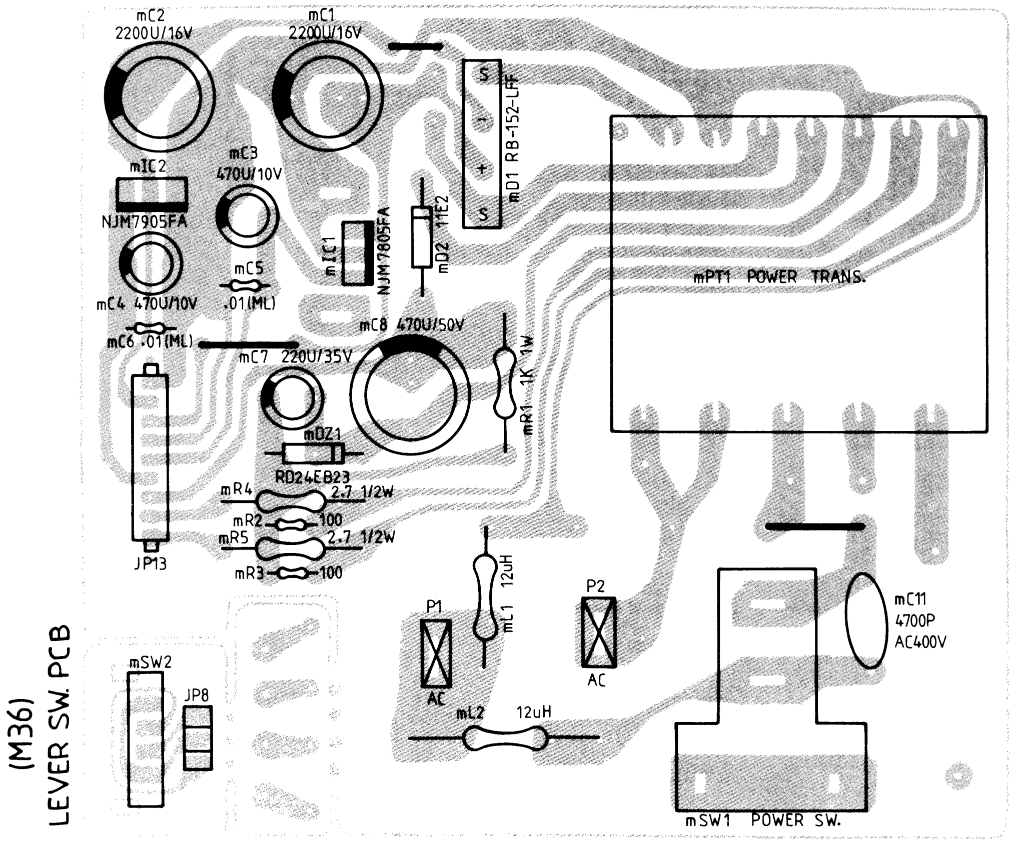
## P C Board-Solder Side / P C Board-Component Side

Model No. VTCF-3021

(M38) POWER SUPPLY PCB


S
-
+
S
mD1 RB-152-LFF
mC1
2200U/16V
mC2
2200U/16V
mIC2
NJM7905FA
mC3
470U/10V
mC4
470U/10V
mC5
.01(ML)
mC6
.01(ML)
mD2 11E2
mIC1 NJM7805FA
mPT1 POWER TRANS.
mR1 1K 1W
mC8 470U/50V
mC7
220U/35V
mDZ1 RD24EB23
mR4 2.7 1/2W
mR2 100
mR5 2.7 1/2W
mR3 100
JP13
mL1 12uH
P2
AC
P1
AC
mC11
4700P
AC400V
mL2 12uH
JP8
mSW2
mSW1 POWER SW.
(M36)
LEVER SW. PCB

(M38) POWER SUPPLY PCB


mC2
2200U/16V
mC1
2200U/16V
S
-
+
S
mD1 RB-152-LFF
mC3
470U/10V
mIC2
NJM7905FA
mC5
.01(ML)
mC4 470U/10V
mC6 .01(ML)
mIC1 NJM7805FA
mD2 11E2
mPT1 POWER TRANS.
mC7 220U/35V
mC8 470U/50V
mR1 1K 1W
mDZ1
RD24EB23
mR4 2.7 1/2W
mR2 100
mR5 2.7 1/2W
mR3 100
JP13
P1
AC
mL1 12uH
P2
AC
mC11
4700P
AC400V
mL2 12uH
mSW2
JP8
mSW1 POWER SW.
(M36)
LEVER SW. PCB

| ZEILE | POSITION | SYM | BEZEICHNUNG | ET-NUMMER |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | LAUTSPRECHERBOX : | |
| 3 | | | | |
| 4 | | | GEHAEUSE,C1600 SCHWARZ | 781 721 6 |
| 5 | | | ABDECKWAND C 1600 | 781 711 7 |
| 6 | | | HOLZDUEBEL FUER ABDECKWAND 4 ST. | 781 736 4 |
| 7 | | | BLENDE FUER TT 160 MM | 781 714 1 |
| 8 | | | BLENDE FUER TT 200 MM | 781 715 8 |
| 9 | | | BLENDE FUER MT OHNE KREUZ | 781 716 6 |
| 10 | | | BLENDE FUER HT MIT KREUZ | 781 717 4 |
| 11 | | | HORNBLENDE SILBER | 781 718 2 |
| 12 | | | TIEFTOENER C 160080-01 | 780 345 5 |
| 13 | | | TIEFTOENER TK 200 MKP | 780 352 1 |
| 14 | | | MITTELTOENER MTR100-45F1-SC | 781 712 5 |
| 15 | | | HOCHTOENER,HT-8/4 | 781 713 3 |
| 16 | ODER | | HOCHTOENER WDT-13/108 | 781 720 8 |
| 17 | | | HOCHTOENER CT 106 FS 585 SCHWARZ | 781 735 6 |
| 18 | | | FREQUENZWEICHE C1600 | 781 719 0 |
| 19 | | | | |
| 20 | | | RACK : | |
| 21 | | | | |
| 22 | J | | GLASTUER 883X428X5 MM | 781 722 4 |
| 23 | K | | GLASDECKEL 430X402X5 MM | 781 723 2 |
| 24 | A | | RADMUFFE | 781 724 0 |
| 25 | B | | SCHARNIERMUFFE | 781 725 7 |
| 26 | E | | ROLLE | 781 726 5 |
| 27 | K | | GLASPROFILLEISTE FUER DECKEL | 781 727 3 |
| 28 | I | | SCHARNIERWINKEL | 781 728 1 |
| 29 | M | | MAGNETSCHNAPPER | 781 729 9 |
| 30 | N | | MAGNETPLATTE | 781 730 7 |
| 31 | O | | SCHARNIER FUER GLASDECKEL | 781 731 5 |
| 32 | P,Q | | SCHARNIER FUER GLASTUER | 781 732 3 |
| 33 | | | | |
| 34 | | | FERNBEDIENUNG,GEBER | 781 448 6 |
| 35 | | | AM-RAHMENANTENNE | 781 410 6 |
| 36 | | | FM-WURFANTENNE 75 OHM-ANSCHLUSS | 965 604 2 |
| 37 | | | | |
| 38 | | | GEHAEUSE U. BEDIENTEILE RDF-TB | |
| 39 | | | | |
| 40 | M1 | | FEDER FUER AUSWURF | 781 411 4 |
| 41 | M2 | | CASSETTENFACH RECHTS "B" | 781 412 2 |
| 42 | M3 | | CASSETTENFACH LINKS "A" | 781 413 0 |
| 43 | M4 | | FRONTSCHEIBE FUER DISPLAY,TUNER | 781 414 8 |
| 44 | M5 | | KNOPF,ATRAPPE | 781 415 5 |
| 45 | M7 | | ZIERSTREIFEN FUER FUSS | 781 416 3 |
| 46 | M8 | | ABDECKFENSTER TB RECHTS | 781 417 1 |
| 47 | M9 | | FILTERSCHEIBE FUER LEDANZEIGE | 781 418 9 |
| 48 | M10 | | ABDECKSCHEIBE FUER LEDANZEIGE | 781 419 7 |
| 49 | M13,001 | | KNOPF,LAUTSTAERKE KPL. | 781 420 5 |
| 50 | M14 | | KNOPF,BALANCE | 781 421 3 |
| 51 | M15 | | NAMENSZUG UNIVERSUM | 781 537 6 |
| 52 | M16,002 | | FRONTBLENDE KPL. | 781 422 1 |
| 53 | M17 | | ANZEIGELINSE FUER POWER | 781 423 9 |
| 54 | M19 | | PLATINE,POWER | 781 424 7 |
| 55 | M20 | | KNOPF,POWER | 781 425 4 |
| 56 | M23 | | HALTEPLATTE FUER ZAEHLWERK | 781 426 2 |
| 57 | M24 | | ZAEHLWERK | 781 427 0 |
| 58 | M25 | | RIEMEN FUER ZAEHLWERK | 781 428 8 |
| 59 | M26 | | KNOPF,3-FACH | 781 429 6 |
| 60 | M28 | | KNOPFLEISTE 9-FACH | 781 430 4 |
| 61 | M29 | | DAEMPFER | 781 431 2 |
| 62 | M32 | | KNOPF,UP-DOWN | 781 432 0 |
| 63 | M35 | | KNOPF,HI-SPEED | 781 433 8 |
| 64 | M36 | | KASTEN FUER DISPLAY | 781 434 6 |
| 65 | M40 | | FILTERSCHEIBE FUER DISPLAY | 781 435 3 |
| 66 | M42 | | KNOPF,FUNKTION 5-FACH | 781 436 1 |
| 67 | M43 | | KNOPF,SCHIEBEREGLER | 781 437 9 |
| 68 | M44 | | KNOPF,SURROUND-BASS | 781 438 7 |
| 69 | M56 | | CASSETTENLAUFWERK | 781 439 5 |
| 70 | M57 | | KNOPF,AUFNAHME | 781 440 3 |
| 71 | M58 | | KNOPF,AUFNAHME | 781 441 1 |
| 72 | M59 | | KNOPF,WIEDERGABE-SCHMAL | 781 442 9 |
| 73 | M60 | | KNOPF,REW | 781 443 7 |
| 74 | M61 | | KNOPF,FF | 781 444 5 |
| 75 | M62 | | KNOPF,STOP-EJECT | 781 445 2 |
| 76 | M63 | | KNOPF,PAUSE | 781 446 0 |
| 77 | M64 | | KNOPF, WIEDERGABE BREIT | 781 447 8 |
| 78 | M66 | | FERNBEDIENUNG,GEBER | 781 448 6 |

| ZEILE | POSITION | SYM | BEZEICHNUNG | ET-NUMMER |
|---|---|---|---|---|
| 244 | IC302 | | IC NJM 4558 D | 950 628 8 |
| 245 | IC305 | | IC BA 6208 | 747 227 7 |
| 246 | IC306-308 | | IC NJM 4558 D | 950 628 8 |
| 247 | IC309-313 | | IC LB 1403 | 985 566 9 |
| 248 | IC401 | | IC NJM 78 L 06 | 733 672 0 |
| 249 | IC501 | | IC UPC 1237 H | 745 514 0 |
| 250 | IC601 | | IC AN 7310 | 781 367 8 |
| 251 | IC701 | | IC TA 7784 P | 734 070 6 |
| 252 | IC702 | | IC TA 8135 P | 781 368 6 |
| 253 | IC801 | | IC CXA 1101 | 781 369 4 |
| 254 | JK101 | | ANTENNENANSCHLUSSBUCHSE | 781 400 7 |
| 255 | JK301 | | CINCHBUCHSE 6-FACH | 781 401 5 |
| 256 | JK302 | | DC-BUCHSE 12V | 781 402 3 |
| 257 | JK502 | | LAUTSPRECHERANSCHLUSSBUCHSE | 781 403 1 |
| 258 | L101 | | AM-ANTENNENSPULE | 781 388 4 |
| 259 | L102 | | AM-OSZILLATORSPULE | 781 389 2 |
| 260 | L103,104 | | DROSSEL | 734 992 1 |
| 261 | L105,106 | | SPULE 470 UH | 741 989 8 |
| 262 | L301,302 | | DROSSEL 47 MH | 921 913 0 |
| 263 | L501,502 | | DROSSEL 2,2 UH | 949 318 0 |
| 264 | L701,702 | | DROSSEL 10 MH | 996 303 4 |
| 265 | L703,704 | | DOLBY MPX FILTER | 781 390 0 |
| 266 | L705,706 | | DROSSEL | 781 391 8 |
| 267 | L707 | | DROSSEL | 734 992 1 |
| 268 | L801 | | LOESCH-OSZILLATORSPULE | 781 392 6 |
| 269 | L802,803 | | SPULE 470 UH | 741 989 8 |
| 270 | LCD101 | | DISPLAY HLC 9861-01-2211 | 781 409 8 |
| 271 | LP101 | | LAMPE 12V/60MA | 781 407 2 |
| 272 | LPF101 | | LOW PASS FILTER 10FE01 | 781 387 6 |
| 273 | PT1 | | NETZTRAFO,GROSS | 781 396 7 |
| 274 | Q101,107 | | TRANSISTOR 2 SC 1675 L | 956 352 9 |
| 275 | Q102,103 | | TRANSISTOR 2 SA 733 P | 275 032 1 |
| 276 | Q104,106 | | TRANSISTOR 2 SC 945 | 175 739 2 |
| 277 | Q105 | | TRANSTOR 2 SK 117 GR/BL | 987 118 7 |
| 278 | Q108-308 | | TRANSISTOR 2 SC 945 | 175 739 2 |
| 279 | Q309 | | TRANSISTOR 2 SD 882 Q | 965 730 5 |
| 280 | Q401,402 | | TRANSISTOR 2 SC 945 | 175 739 2 |
| 281 | Q501,502 | | TRANSISTOR 2 SC 3067 F,G | 781 370 2 |
| 282 | Q503-506 | | TRANSISTOR BD 373 D | 951 626 1 |
| | | | ERSETZT ET-NR. 922 324 9 | |
| 283 | Q507,508 | | TRANSISTOR 2 SA 608 KF | 781 371 0 |
| 284 | Q509,510 | | TRANSISTOR 2 SA 1209 S | 781 372 8 |
| 285 | Q511,512 | | TRANSISTOR 2 SC 2911 S | 781 373 6 |
| 286 | Q513,514 | | TRANSISTOR 2 SD 947 | 781 374 4 |
| 287 | Q515,516 | | TRANSISTOR 2 SC 3117 S,R | 781 375 1 |
| 288 | Q517,518 | | TRANSISTOR 2 SA 1249 S,R | 781 376 9 |
| 289 | Q519,520 | | TRANSISTOR 2 SC 3281 R | 781 377 7 |
| 290 | Q521,522 | | TRANSISTOR 2 SA 1302 R | 781 378 5 |
| 291 | Q523,524 | | TRANSISTOR 2 SC 1841 E/F | 988 714 2 |
| 292 | Q525 | | TRANSISTOR 2 SA 988 F,E | 781 379 3 |
| 293 | Q527 | | TRANSISTOR 2 SD 313 E,F | 781 380 1 |
| 294 | Q701-708 | | TRANSISTOR 2 SC 945 | 175 739 2 |
| 295 | Q709,741 | | TRANSISTOR 2 SA 733 P | 275 032 1 |
| 296 | Q710-719 | | TRANSISTOR 2 SC 945 | 175 739 2 |
| 297 | Q720,721 | | TRANSISTOR 2 SA 733 P | 275 032 1 |
| 298 | Q722-740 | | TRANSISTOR 2 SC 945 | 175 739 2 |
| 299 | Q803-808 | | TRANSISTOR 2 SC 945 | 175 739 2 |
| 300 | Q809,817 | | TRANSISTOR 2 SA 733 P | 275 032 1 |
| 301 | Q810,811 | | TRANSISTOR 2 SC 2001K | 948 045 0 |
| 302 | Q812 | | TRANSISTOR 2 SC 945 | 175 739 2 |
| 303 | Q816 | | TRANSISTOR 2 SD 313 | 921 146 7 |
| 304 | R521-524 | | WIDERSTAND 0.22 OHM 5 WATT | 781 361 1 |
| 305 | RY401,NETZ | | RELAIS OMIT-SS-112DM | 781 405 6 |
| 306 | RY501,LAUT | | RELAIS OMIT-SS-212D | 781 406 4 |
| 307 | S301,302 | | DRUCKSCHALTER | 781 397 5 |
| 308 | S303-307 | | TAKTSCHALTER | 781 398 3 |
| 309 | S701 | | TAKTSCHALTER | 781 839 6 |
| 310 | S702 | | A/W-SCHALTER | 781 399 1 |
| 311 | S703,704 | | TAKTSCHALTER | 781 839 6 |
| 312 | S906-922 | | TAKTSCHALTER | 781 398 3 |
| 313 | T101 | | AM-ZF-FILTER | 781 393 4 |
| 314 | T102 | | FM-ZF-FILTER | 781 394 2 |
| 315 | T401 | | NETZTRAFO,STANDBY | 781 395 9 |
| 316 | VR301-305 | | SCHIEBEREGLER 2X100KB | 781 383 5 |
| 317 | VR306,BAL | | DREHPOTI 100KW | 781 384 3 |
| 318 | VR307,LAUT | | DREHPOTI 2X50KB MIT MOTOR | 781 385 0 |
| 319 | | | | |
| 320 | | | ELEKTRISCHE TEILE CD : | |
| 321 | | | | |
| 322 | | | CD-PLATINE | 781 549 1 |
| 323 | FD1 | | DIODE SVC 342 | 781 561 6 |
| 324 | FD2-9 | | DIODE 1 SS 133 | 967 548 9 |
| 325 | FDZ1 | | DIODE RD 3 EB | 725 599 5 |
| 326 | FDZ2 | | Z-DIODE MTZ 5,6A | 732 291 0 |
| 327 | FDZ3,4 | | ZENERDIODE ZD 6,8 C | 989 145 8 |
| 328 | FIC1 | | IC HA 12095 NT | 744 245 2 |
| 329 | FIC2 | | IC CXD 1167 Q | 781 558 2 |

| ZEILE | POSITION | SYM BEZEICHNUNG | ET-NUMMER |
|---|---|---|---|
| 330 | FIC3 | IC NJM 2082 L | 781 554 1 |
| 331 | FIC4,5 | IC NJM 4558 L | 781 555 8 |
| 332 | FIC6 | IC LB 1641 | 765 792 7 |
| 333 | FL1 | OSZILLATORSPULE | 781 563 2 |
| 334 | FL2,3 | SPULE | 781 562 4 |
| 335 | FQ1,3,5,7 | TRANSISTOR 2 SC 2060 Q | 747 560 1 |
| 336 | FQ2,4,6,8 | TRANSISTOR 2 SA 934 QR | 723 974 2 |
| 337 | FQ9 | TRANSISTOR 2 SA 952 | 956 654 8 |
| 338 | FQ10,13,15 | TRANSISTOR 2 SA 733 P | 275 032 1 |
| 339 | FQ11,12 | TRANSISTOR 2 SC 1740 SR | 781 559 0 |
| 340 | FQ14,16 | TRANSISTOR 2 SC 1740 SS | 781 560 8 |
| 341 | MD1 | GLEICHRICHTER B 20 SL | 733 235 6 |
| 342 | MD2 | DIODE 11E2TA1 | 722 268 0 |
| 343 | MDZ1 | ZENERDIODE RD 24 FB 3 | 954 413 1 |
| 344 | MIC1 | IC NJM 7805 FA | 781 543 4 |
| 345 | MIC2 | IC NJM 7905 FA | 781 544 2 |
| 346 | ML1,2 | DROSSEL | 781 546 7 |
| 347 | MPT1 | NETZTRAFO | 781 548 3 |
| 348 | MSW1 | NETZSCHALTER | 781 547 5 |
| 349 | MSW2 | MIKROSCHALTER | 781 796 8 |
| 350 | NFL1 | DISPLAY FV 469 GH | 781 565 7 |
| 351 | OJ1 | CINCHBUCHSE 2-FACH | 781 564 0 |
| 352 | OS1-12 | TACTSCHALTER | 781 566 5 |
| 353 | TPH1,2 | THERMISTOR | 781 795 0 |
| 354 | VD1,2 | DIODE 1 SS 133 | 967 548 9 |
| 355 | VDZ1 | Z-DIODE MTZ 5,1B | 732 293 6 |
| 356 | VIC1 | IC LC 7883 KM | 781 550 9 |
| 357 | VIC2 | IC NJM 4558 D | 950 628 8 |
| 358 | VIC3,4 | IC NJM 4558 LD | 781 556 6 |
| 359 | VIC6 | IC NJM 78 L 06 | 733 672 0 |
| 360 | VIC7 | IC NJM 79 L 06 A | 781 557 4 |
| 361 | VQ2L/R | TRANSISTOR 2 SC 2878 | 985 455 5 |
| 362 | VQ3 | TRANSISTOR 2 SA 733 P | 275 032 1 |
| 363 | VY1 | QUARZ 16.9344 MHZ | 742 126 6 |
| 364 | WD1-6 | DIODE 1 N 4148 | 175 540 4 |
| 365 | WDZ1 | DIODE RD 3 EB | 725 599 5 |
| 366 | WIC1 | IC HD 404729 | 781 552 5 |
| 367 | WIC2,IR-EM | IR-EMPFAENGER SBX 1610-52 | 781 567 3 |
| 368 | WIC3 | IC BU 4013 B | 747 677 3 |
| 369 | WIC4 | IC MC 78 M 06 CT | 781 553 3 |
| 370 | WL1 | SPULE | 781 562 4 |
| 371 | WQ3 | TRANSISTOR 2 SC 1740 SS | 781 560 8 |
| 372 | WQ4,9 | TRANSISTOR 2 SA 733 P | 275 032 1 |
| 373 | WQ5,6 | TRANSISTOR 2 SA 952 | 956 654 8 |
| 374 | WQ7,8 | TRANSISTOR 2 SC 2001K | 948 045 0 |
| 375 | WQ17,18 | TRANSISTOR 2 SC 1740 SR | 781 559 0 |
| 376 | | | |
| 377 | | **PLATTENSPIELER :** | |
| 378 | | | |
| 379 | | MAGNET SYSTEM DMS 239 | 987 948 7 |
| 380 | | NADELTRAEGER DIAMANT DN 239 | 987 949 5 |
| 381 | | | |
| 382 | 1 | TELLERBELAG | 781 454 4 |
| 383 | 2 | SPRENGRING | 781 455 1 |
| 384 | 3 | PLATTENTELLER | 781 456 9 |
| 385 | 5 | RIEMEN | 781 457 7 |
| 386 | 6 | TELLERACHSE | 781 458 5 |
| 387 | 12 | 12V ANSCHLUSSKABEL | 781 459 3 |
| 388 | 13 | SINGLE-ADAPTER,PUCK | 781 460 1 |
| 389 | 16 | ABSCHALTHEBEL | 781 461 9 |
| 390 | 17 | FEDER FUER ABSCHALTHEBEL | 781 462 7 |
| 391 | 19 | KURVENRAD | 781 463 5 |
| 392 | 20 | TONARM | 781 464 3 |
| 393 | 26 | CLIP FUER TONARMSTUETZE | 781 465 0 |
| 394 | 27 | TONARMSTUETZE | 781 466 8 |
| 395 | 28 | LIFTHEBEL | 781 467 6 |
| 396 | 29 | FEDER FUER LIFTARM | 781 468 4 |
| 397 | 31 | SCHALTKULISSE | 781 469 2 |
| 398 | 32 | ABSCHALTSTANGE | 781 470 0 |
| 399 | 34 | UMSCHALTHEBEL | 781 471 8 |
| 400 | 35 | SCHALTARM | 781 472 6 |
| 401 | 36 | BLATTFEDERSCHALTER | 781 473 4 |
| 402 | 39 | FEDER FUER SCHALTARM | 781 474 2 |
| 403 | 40 | KNOPF,STOP | 781 475 9 |
| 404 | 41 | STOPSTANGE | 781 476 7 |
| 405 | 42 | STOPHEBEL | 781 477 5 |
| 406 | 47 | FUSSAUFNAHME | 781 478 3 |
| 407 | 49 | SCHALTER,33/45 | 781 479 1 |
| 408 | 50 | KNOPF,33/45 | 781 480 9 |
| 409 | 52 | MOTOR TMF 2R80 | 742 860 0 |
| 410 | 53 | ZARGE | 781 481 7 |
| 411 | 55 | BODENPLATTE | 781 482 5 |
| 412 | 56 | FUSS | 781 483 3 |
| 413 | 57 | BODENLEISTE | 781 484 1 |
| 414 | 60 | LIFTARM | 781 485 8 |
| 415 | 63 | FRONTBLENDE | 781 486 6 |
| 416 | 65 | RING FUER FUSS | 781 487 4 |
| 417 | 67 | NAMENSZUG UNIVERSUM | 781 537 6 |

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